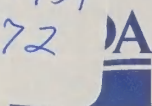


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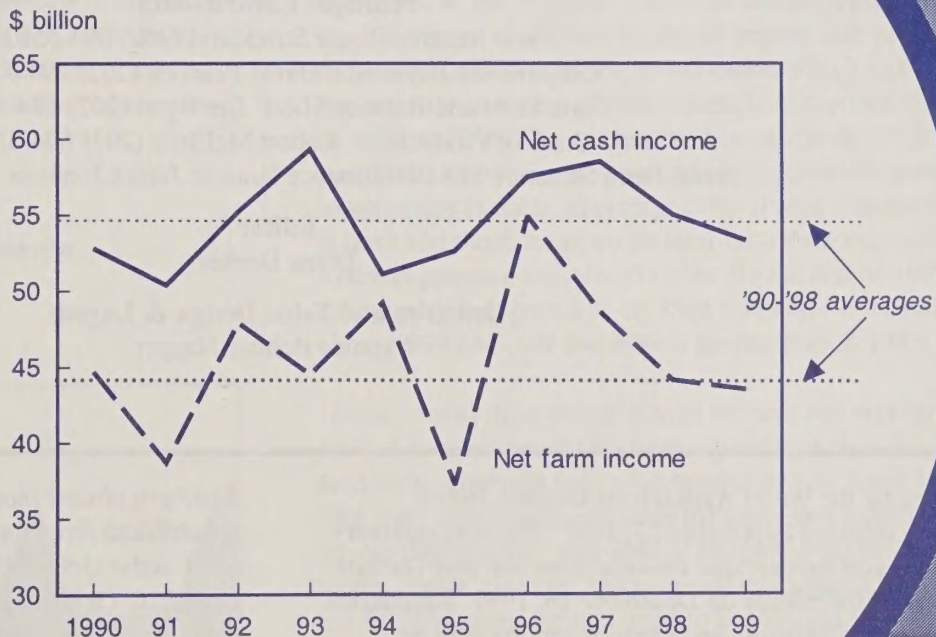
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September 1999

Agricultural Income and Finance

Situation and Outlook Report

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1999 Incomes Below Decade Averages



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Approved by the World Agricultural Outlook Board.
Summary released September 23, 1999. The next summary
of *Agricultural Income and Finance Situation and Outlook*
is scheduled for release on December 16, 1999. Summaries
and full text of Situation and Outlook reports may be
accessed electronically via the ERS website at
www.econ.ag.gov/.

The *Agricultural Income and Finance Situation and Outlook*
is published three times a year. To order, call 1-800-999-
6779 in the U.S. or Canada. Other areas please call (703)
605-6220. Or write ERS-NASS, 5285 Port Royal Road,
Springfield, VA 22161.

Highlights

With low commodity prices, 1999 net farm income, forecast at \$43.5 billion, will fall below the revised estimate for 1998 of \$44.1 billion. Direct government payments, an important component of farm income this year, are forecast at \$15.5 billion, second only to 1987's high of \$16.7 billion (figure 1). Loan deficiency payments are forecast at \$5.6 billion and account for the large increase in payments over 1998.

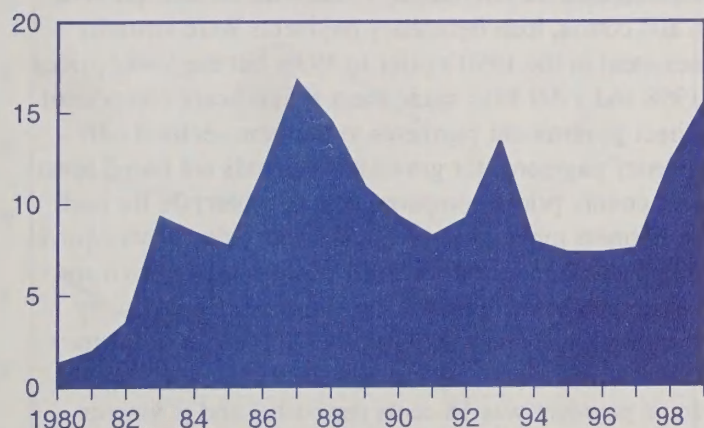
Reductions in 1999 income will fall most heavily on farms that specialize in soybeans, corn, and hogs. Net cash income is projected to drop more than 20 percent from a year earlier on soybean farms. Hog and corn farms are close behind with declines of 18 and 17 percent, respectively. Some farm types will likely see income increase or remain relatively flat during 1999, reminding us of the dynamic status of the U.S. farm economy. Farms that specialize in beef cattle should on average realize income increases of 13 percent from 1998. Poultry and dairy farms are expected to have smaller increases.

Cash-flow problems for farm businesses in 1999 are expected to be most pervasive in three regions of the country—the Heartland, Mississippi Portal, and Southern Seaboard. Given continued low prices for corn and soybeans, average net cash income in the Heartland is expected to be 11 percent lower than in 1998. Nearly 20 percent of farm businesses in this region may not earn enough income to cover expenses, compared with 14 percent in 1998. With an 11-percent decline in average net cash income between 1998 and 1999, 23 percent of farm businesses in the Mississippi Portal region are not expected to cover cash expenses. In the Southern Seaboard region, low prices for tobacco, cotton, and soybeans are expected to reduce average net cash income 12 percent.

Figure 1

Anticipated '99 government payments near 1987 record

\$ billion



Source: Economic Research Service, USDA.

Farm Business Assets Revised Downward

ERS has incorporated data from the 1997 Census of Agriculture that include significant revisions in the value of farm real estate assets relative to the 1992 Census and relative to last year's land value survey by the National Agricultural Statistics Service. These revisions affect balance sheet estimates from 1993 through 1998. Since the value of farmland assets is a large share of the total value of farm business assets, the U.S. value of farm business assets and equity has been revised downward over this period.

Many farmers will use additional government payments to reduce financial exposure by paying down debt. Farm debt is expected to stabilize in 1999 at \$172 billion, following increases of 6 percent in 1997 and 4.5 percent in 1998. While the recent rise in debt may cause additional financial difficulty for some farms, it does not indicate widespread financial distress in the farm sector. Nevertheless, farmers are expected to use nearly 60 percent of the debt that can be supported by 1999 income. This would be the highest since 1986, but it remains substantially below 1979-85, when farmers used more than 70 percent of their debt repayment capacity.

Despite the increase in debt in recent years, farm business balance sheets have shown steady improvement throughout the 1990's, especially since 1992. Debt-to-asset ratios have improved, as the 23-percent increase in farm business debt has been more than offset by the 29-percent rise in the value of farm business assets. Farm real estate, which represents the largest component of farm assets, is expected to increase in value in 1999. The increase will be relatively small compared with previous years, reflecting the counterbalancing of lower prices in areas where agricultural uses dominate transactions and those areas where land values are increasing due to urban pressure and other factors. By the end of 1999, U.S. farm equity is expected to be \$864.5 billion—\$9.1 billion above 1998 and over \$48 billion greater than in 1985.

Lower overall input prices helped farmers and ranchers in 1998. Livestock producers were especially helped by lower feed costs, although feed grain producers saw lower receipts. The costs and returns estimates for some commodities will appear different this year than in the past. For corn, soybeans, cotton, peanuts, and cow-calf estimates, ERS is revising its accounting methodology to conform to new standards recommended by the American Agricultural Economics Association. For these five commodities, ERS is also publishing regional estimates using new farm resource regions.

Farm Income Forecast To Decline Only Slightly in 1999

With low commodity prices, 1999 net farm income will fall below the revised estimate for 1998, but will still approach the longer-term decade average.

In late 1997 and 1998, rising world commodity supplies and weak demand reduced farm prices and the value of farm exports. This scenario has continued into 1999. The U.S. government reacted with legislation to increase assistance to farmers, which is helping maintain farm income and tempering financial hardship for many producers. In 1999, supplies of most agricultural commodities have remained large, both from stocks carried over from 1998 and from large crop harvests around the world. Not only has the United States harvested large crops for several years, but so have other major producing countries, such as the European Union, Canada, Australia, Brazil and Argentina.

With low commodity prices, 1999 *net farm income*, forecast at \$43.5 billion, will fall below the revised estimate of \$44.1 billion for 1998 (table 1). On average, cash receipts are forecast to be about \$4.3 billion below those of 1998, the lowest since 1994. Cash receipts will be down \$7.4 billion in 1999 for major field crops—food grains, feed grains, cotton, oil crops, and tobacco (figures 2-7). Cash receipts will be up \$1.5 billion for fruit, vegetable, and greenhouse/nursery crops. Loan deficiency payments to producers of major field crops, such as corn and soybeans, are forecast at over \$5.6 billion for 1999. In 1998, about \$1.8 billion of direct payments were for loan deficiency payments.

Net farm income estimates for both the 1998 and 1999 calendar years are higher because of nearly \$6.0 billion in additional government support as a part of the 1999 Appropriations Act signed into law in October 1998. This additional support, coupled with loan deficiency payments, has provided an important source of income for farms. Direct payments are forecast at \$15.5 billion for the 1999 calendar year, up from the \$12.2 billion paid in 1998 (table 2). As now projected, 1999 payments would be second only to the 1987 high of \$16.7 billion.

In contrast to crops, livestock cash receipts are expected to reach their second highest level of the 1990's, rising more than \$1.5 billion from 1998 to 1999. With the exception of hogs, livestock receipts are generally improving in 1999. Beef production is up in 1999 and dairy prices turned sharply upward at midyear. Poultry receipts are up slightly, continuing a long-term trend. Hogs continue to be produced in abundance, largely due to structural change occurring in the industry. Investments in large processing plants are stimulating regional increases in production, which raise national supplies and lower prices. Prices will continue under pressure until the necessary adjustments in overall supplies are made, or demand rises significantly.

Government Payments Become an Important Component of Revenues

Continued low prices for major commodities will generate a notable increase in 1999 loan deficiency payments from 1998. Forecasts based on current price expectations indicate that 1999 loan deficiency payments will be \$5.6 billion, compared with \$1.8 billion in 1998. With the exception of rice and cotton, loan deficiency payments were virtually nonexistent in the 1990's prior to 1998, but the lower prices in 1998 and 1999 have made them a significant component of direct government payments to the farm sector. Loan deficiency payments for grains and oilseeds are based upon posted county prices compared with the loan rate for each area. Farmers may request loan deficiency payments equivalent to the difference between the posted county price and the loan rate for the quantity they have produced. In any given year, some areas may be eligible for loan deficiency payments and others may not. For the 1998 corn crop, the average payment was 18 cents per bushel and payments were made on 58 percent of production. Both a higher aver-

Table 1--Income statement for U.S. farm sector, 1997-99F

	1997	1998	1999F
	\$ billion		
Cash income statement:			
1. Cash receipts	207.6	196.8	192.5
Crops	111.1	102.2	96.3
Livestock	96.5	94.5	96.2
2. Direct Government payments	7.5	12.2	15.5
3. Farm-related income	12.4	13.8	14.3
4. Gross cash income (1+2+3)	227.5	222.8	222.3
5. Cash expenses	169.0	167.8	168.9
6. NET CASH INCOME (4-5)	58.5	55.0	53.3
Farm income statement:			
7. Gross cash income (1+2+3)	227.5	222.8	222.3
8. Nonmoney income	10.6	11.3	11.9
9. Inventory adjustment	0.5	-1.0	-0.5
10. Total gross income (7+8+9)	238.7	233.1	233.6
11. Total expenses	190.0	189.0	190.1
12. NET FARM INCOME (10-11)	48.6	44.1	43.5

Figure 2
Monthly wheat prices
\$/bushel

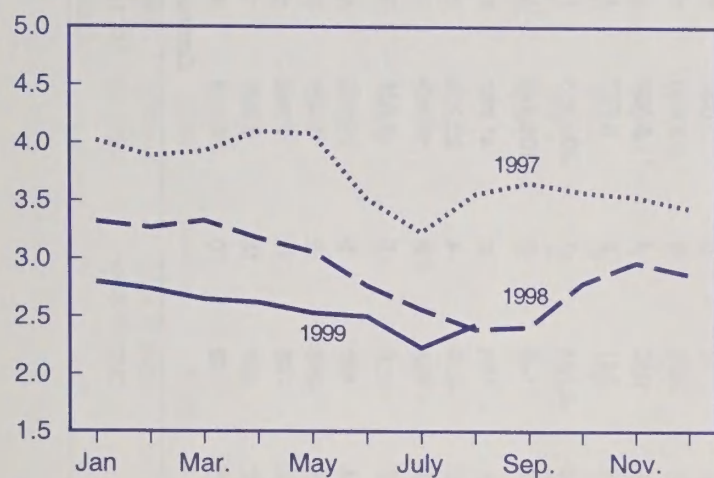


Figure 3
Monthly corn prices
\$/bushel

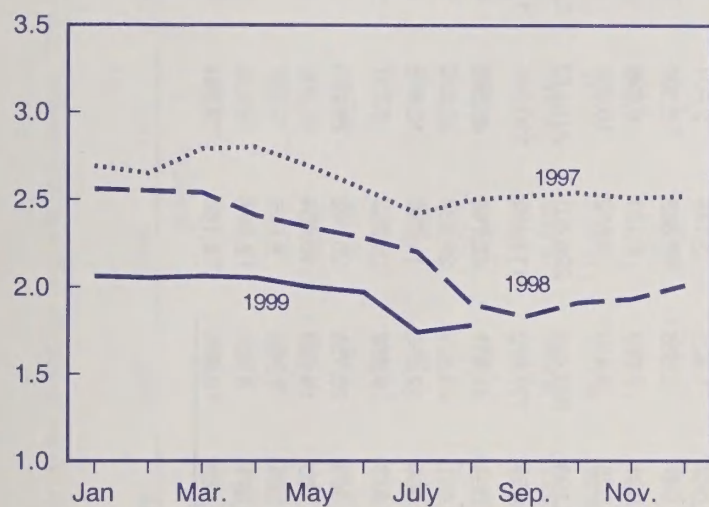


Figure 4
Monthly soybean prices
\$/bushel

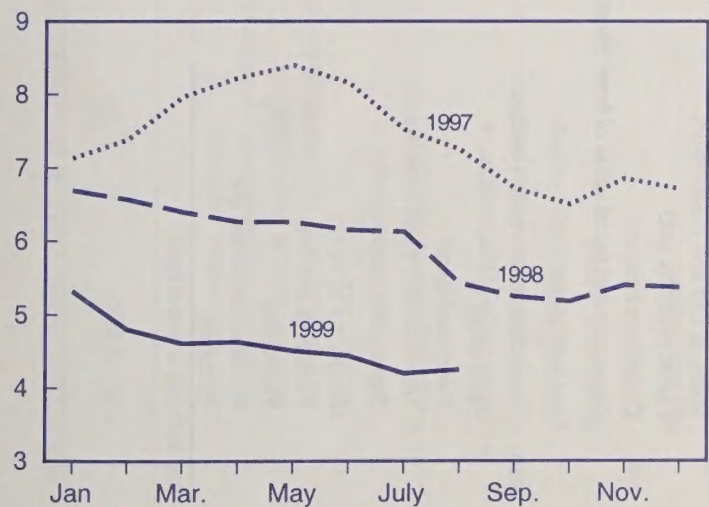


Figure 5
Monthly upland cotton prices
\$/pound

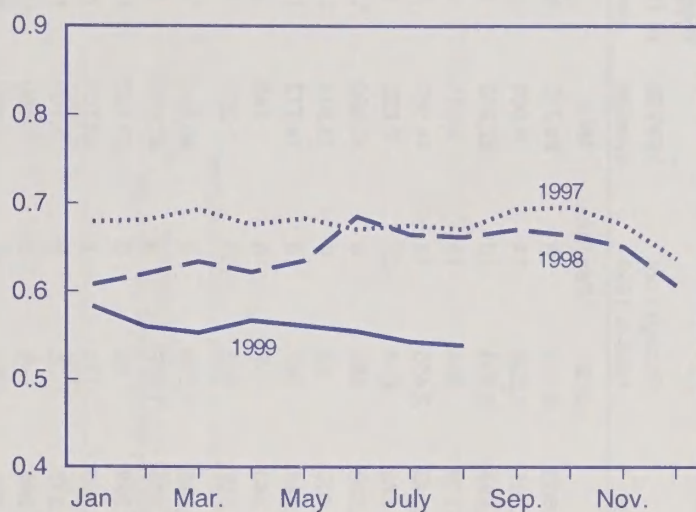


Figure 6
Monthly beef cattle prices
\$/cwt

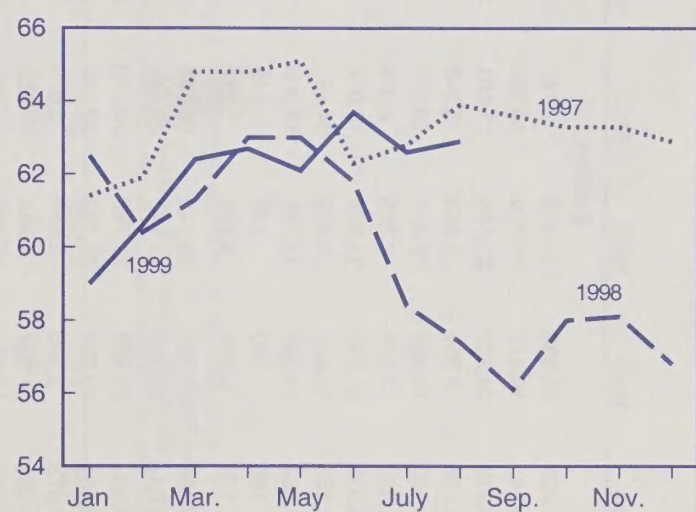


Figure 7
Monthly hog prices
\$/cwt

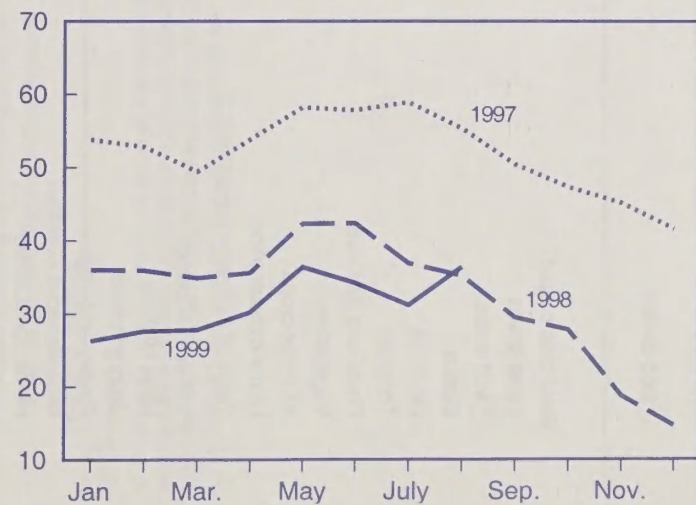


Table 2--Value added to the U.S. economy by the agricultural sector via the production of goods and services, 1994-99

United States	1994	1995	1996	1997	1998	1999F	Change from		1990-98 average	1999 as % of 1990-98 average
							Mil \$	Percent		
			\$ million							
Final crop output	100,405	95,838	115,435	112,142	101,952	96,603	-5,349	-5	95,710	101
Food grains	9,545	10,417	10,719	10,137	8,734	7,501	-1,232	-14	9,001	83
Feed crops	20,310	24,520	27,185	27,101	22,927	20,694	-2,233	-10	22,260	93
Cotton	6,738	6,851	6,983	6,346	6,013	5,119	-894	-15	6,011	85
Oil crops	14,652	15,493	16,344	19,673	17,198	14,743	-2,455	-14	14,980	98
Tobacco	2,656	2,548	2,795	2,874	2,989	2,375	-614	-21	2,820	84
Fruits and tree nuts	10,315	11,097	11,928	13,074	11,727	12,623	896	8	10,880	116
Vegetables	14,185	15,040	14,439	14,961	15,337	15,400	63	0	13,614	113
All other crops	14,684	14,989	15,789	16,909	17,297	17,844	547	3	14,772	121
Home consumption	150	150	149	149	149	140	-9	-6	148	95
Value of inventory adjustment 2/	7,170	-5,266	9,104	917	-420	162	582	-139	1,225	13
Final animal output	89,695	87,707	92,142	96,543	94,276	95,835	1,559	2	90,767	106
Meat animals	46,661	44,865	44,154	49,682	43,604	44,983	1,378	3	47,673	94
Dairy products	19,983	19,880	22,785	20,940	24,312	24,398	86	0	20,562	119
Poultry and eggs	18,461	19,051	22,432	22,234	22,806	22,980	174	1	18,700	123
Miscellaneous livestock	3,073	3,306	3,585	3,679	3,816	3,816	0	0	3,109	123
Home consumption	404	357	334	382	349	355	6	2	420	84
Value of inventory adjustment 2/	1,112	248	-1,147	-374	-612	-697	-85	14	302	-231
Services and forestry	18,097	19,945	20,824	22,489	24,612	25,618	1,006	4	18,778	136
Machine hire and customwork	2,064	1,922	2,149	2,601	2,309	2,321	11	0	2,024	115
Forest products sold	2,687	2,815	2,632	2,900	2,816	2,890	74	3	2,469	117
Other farm income	4,321	5,799	6,191	6,896	8,672	9,051	380	4	5,528	164
Gross imputed rental value of farm dwellings	9,025	9,410	9,852	10,092	10,815	11,356	541	5	8,757	130
Final agricultural sector output	208,198	203,489	228,401	231,173	220,839	218,056	-2,784	-1	205,255	106
less: Intermediate consumption outlays	104,858	109,672	113,192	120,946	118,739	118,887	148	0	105,449	113
Farm origin	41,304	41,801	42,745	46,860	44,934	44,801	-133	0	41,747	107
Feed purchased	22,631	23,829	25,234	26,332	25,031	24,102	-929	-4	22,705	106
Livestock and poultry purchased	13,300	12,510	11,299	13,818	12,691	13,487	795	6	13,412	101
Seed purchased	5,373	5,462	6,212	6,711	7,211	7,212	0	0	5,631	128
Manufactured inputs	24,399	26,155	28,602	29,235	28,274	28,834	560	2	25,302	114
Fertilizers and lime	9,180	10,033	10,934	10,933	10,653	10,435	-218	-2	9,481	110
Pesticides	7,225	7,726	8,526	9,027	9,128	9,061	-67	-1	7,390	123
Petroleum fuel and oils	5,311	5,426	5,978	6,230	5,585	6,417	832	15	5,620	114
Electricity	2,683	2,970	3,164	3,044	2,908	2,921	12	0	2,811	104

See footnotes at end of table.

Continued--

Table 2--Value added to the U.S. economy by the agricultural sector via the production of goods and services, 1994-99--Continued

United States	1994	1995	1996	1997	1998	1999F	Change from 1998 to 1999		1990-98 average	1999 as % of 1990-98 average
				\$ million			Mil \$	Percent		
Other intermediate expenses	39,155	41,715	41,846	44,851	45,531	45,252	-278	-1	38,400	118
Repair and maintenance of capital items	9,084	9,471	10,256	10,412	10,354	10,398	45	0	9,381	111
Machine hire and customwork	4,788	4,790	4,717	4,923	5,548	5,418	-129	-2	4,452	122
Marketing, storage, and transportation expenses	6,821	7,182	6,927	7,118	6,722	6,856	133	2	5,988	114
Contract labor	1,804	1,967	2,126	2,591	2,374	2,470	96	4	1,947	127
Miscellaneous expenses	16,658	18,306	17,820	19,806	20,533	20,110	-423	-2	16,633	121
plus: Net government transactions	1,117	207	225	169	4,558	7,719	3,160	69	2,330	331
+ Direct Government payments	7,879	7,253	7,340	7,495	12,220	15,520	3,300	27	9,141	170
- Motor vehicle registration and licensing fees	415	462	423	474	497	507	9	2	411	123
- Property taxes	6,347	6,584	6,692	6,852	7,164	7,295	131	2	6,400	114
Gross value added	104,456	94,025	115,434	110,396	106,659	106,888	228	0	102,135	105
less: Capital consumption	18,624	18,933	19,230	19,293	19,448	19,347	-101	-1	18,725	103
Net value added	85,833	75,092	96,204	91,103	87,211	87,540	329	0	83,411	105
less: Factor payments	36,598	37,880	41,278	42,481	43,123	44,015	893	2	37,863	116
Employee compensation (total hired labor)	13,507	14,327	15,303	16,018	16,904	17,822	918	5	14,049	127
Net rent received by nonoperator landlords	11,548	10,951	12,995	12,938	12,626	12,425	-201	-2	11,427	109
Real estate and nonreal estate interest	11,544	12,602	12,981	13,524	13,593	13,769	176	1	12,387	111
Net farm income	49,235	37,212	54,926	48,623	44,088	43,525	-563	-1	45,548	96

F = forecast.

1/ Final sector output is the gross value of the commodities and services produced within a year. Net value-added is the sector's contribution to the National economy and is the sum of the income from production earned by all factors-of- production. Net farm income is the farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development.

2/ A positive value of inventory change represents current-year production not sold by December 31. A negative value is an offset to production from prior years included in current-year sales.

age payment and a greater share of production covered in 1999 will boost loan deficiency payments for corn and other major commodities.

The "Omnibus Consolidated and Emergency Supplemental Appropriations for Fiscal Year 1999" Act of October 1998 included about \$5.6 billion in direct government payments for the farm sector. About half of that amount was intended as supplemental payments, which helped offset the loss of overseas markets and lower commodity prices. An amount of \$2.8 billion was disbursed in one-time supplemental payments by the end of calendar 1998. The remainder was appropriated as disaster payments to assist farmers who had suffered crop losses due to severe climatic conditions in 1998 and prior years. The disaster payments are likely to be disbursed during calendar 1999.

Production flexibility payments set forth in the 1996 Farm Act will trend downward in 1999, as set forth in the legislation. Production flexibility payments are authorized by fiscal years, which begin on October 1. The farmer has an option of taking a portion of the total payment prior to December 31, or taking all of the payment in the forthcoming calendar year. Consequently, the forecast of \$5.1 billion in production flexibility payments for 1999 comes from amounts budgeted for fiscal years 1999 and 2000. The forecast presumes that about 20 percent of fiscal year 2000's appropriated funds will be taken by December 31, 1999, and the remainder will fall within the next calendar year.

The total expected government payments for 1999 of \$15.5 billion would be the highest amount since expenditures of \$16.7 billion in 1987. In 1987 government payments were equivalent to 10 percent of gross cash revenues, falling to 5 percent in 1998 (table 3). As forecast for 1999, government payments could reach 7 percent of cash revenues. Until now, the largest total of government payments in the 1990's was \$13.4 billion in 1993.

After Falling in 1998, 1999 Production Expenses Return to 1997's Record

In 1999, total production expenses are forecast at \$190.1 billion, up 1.1 percent from 1998 and equal to the record set in 1997. Overhead and feed are the largest single expenses in 1999 (figure 8). The drop in 1998 production expenses was only the second significant drop since the 6-percent declines that occurred in both 1985 and 1986.

Total expenditures for the principal crop inputs, seeds, fertilizer, and pesticides, are projected to be \$26.7 billion, down 1.1 percent from 1998. Expenditures for pesticides and seeds are nearly the same, while fertilizer expenses are forecast down 2.8 percent.

The most significant increase in annual prices paid will be in fuels, which are currently forecast to rise around 14 per-

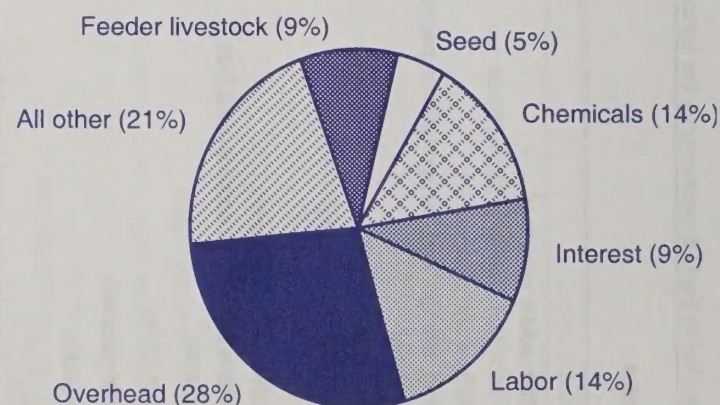
cent. Oil futures are currently above \$20 per barrel and certain domestic refineries have been experiencing production problems. However, the final level is uncertain at this point. Interest expenses are projected up 0.6 percent, the smallest increase since 1993. ERS is currently forecasting 1999 interest rates to be about the same as in 1998.

Table 3--Distribution of 1998 government payments

Item	Percent of total payments	Payments as a percent of gross cash income	Average payment across all U.S. farms
All farms	100	5	4,291
Farm typology:			
Limited-resources	1	10	722
Retirement	5	13	1,566
Residential/lifestyle	9	7	993
Farm occ./lower sales	13	8	2,833
Farm occ./higher sales	24	8	12,870
Large family farms	24	7	24,539
Very large family farms	20	3	29,971
Nonfamily farms	4	2	8,970
ERS Region:			
Heartland	36	8	7,084
Northern Crescent	8	3	2,227
Northern Great Plains	14	10	13,945
Prairie Gateway	20	9	6,253
Eastern Uplands	1	2	437
Southern Seaboard	3	2	1,401
Fruitful Rim	8	2	2,934
Basin and Range	3	5	2,781
Mississippi Portal	7	10	6,806

Source: Agricultural Resource Management Study. Reported by farmers and ranchers in the 1998 ARMS.

Figure 8
Overhead, feed, chemicals, and labor major 1999 inputs



Source: Economic Research Service, USDA.

How Loan Deficiency Payments Work

Producers may apply for a loan deficiency payment (LDP) whenever the posted county price for an eligible commodity is less than the local loan rate established for Commodity Credit Corporation (CCC) non-recourse loans.

- Eligible commodities—Wheat, corn, grain sorghum, barley, oats, soybeans, minor oilseeds, rice, and upland cotton are eligible for payments.
- Eligible producers—To be eligible for LDPs producers must meet certain basic criteria, mainly:
 - a) Producers must have control of their commodity, bear the risk of its loss, and have title to the quantity for which they request an LDP.
 - b) Producers must have a Production Flexibility Contract to receive payments for wheat, feed grains, upland cotton, and rice. However, producers without Production Flexibility Contracts can receive LDPs for oilseed crops.
 - c) Producers must comply with applicable conservation and wetland protection requirements.
 - d) The crop must not be under loan.
- Amount of the LDP—Loan rates and prices are established for the local level.
 - a) Loan rates are established annually at the national level based on formulas and statutory limits. National loan rates for commodities, except rice, are then adjusted to the local level (county or warehouse) to reflect spatial differences in markets, transportation costs, and other factors.
 - b) The loan rate formula for wheat, corn, and soybeans is 85 percent of the average price in the 5 previous marketing years, excluding the highest and lowest prices for those years, but not exceeding statutory limits. These limits are a maximum of \$2.58 per bushel for wheat, \$1.89 for corn, and no lower than \$4.92 nor higher than \$5.26 for soybeans. Loan rates for other feed grains are based on the formula for corn. The loan rate for rice is fixed at \$6.50 through 2002. The upland cotton formula is the most complex and includes consideration of world prices.
 - c) The applicable local price (technically the “alternative loan repayment rate”) for wheat, feed grains, and oilseeds reflects CCC’s estimates of a local market price for each of these commodities. This price is commonly known as the posted county price. Upland cotton and rice prices are based upon the world price adjusted to the United States.
- Getting an LDP—When the alternative loan repayment rate is lower than local loan rate, the farmer may apply for an LDP based on this difference times the quantity of the commodity that otherwise could have been placed under a non-recourse CCC loan. When the producer receives an LDP, it is in lieu of securing a nonrecourse loan.

For additional background on loan deficiency payments consult USDA’s Farm Service Agency’s website at <http://www.fsa.usda.gov>

On the demand side, feed use should increase less than 1 percent as decreasing inventories of cattle and hogs in 1999 will nearly offset continued growth in the poultry sector. Slightly lower acreage planted in principal crops has lowered demand for crop production inputs.

Forecast 1999 feed expenses are \$24.1 billion, down 3.7 percent from 1998. Feed expenses have fallen in 1998 and 1999 primarily because of the continuing drop in feed prices that began with the 1996 harvest. The principal factor influencing feed demand in 1999 will be the fall in the number of cattle on feed. The reduced supply of feeder cattle is being held outside feedlots to higher weights because pasture conditions have improved and increased hay production has lowered prices. Also, cow and heifer slaughter will move toward normal levels as producers begin to retain

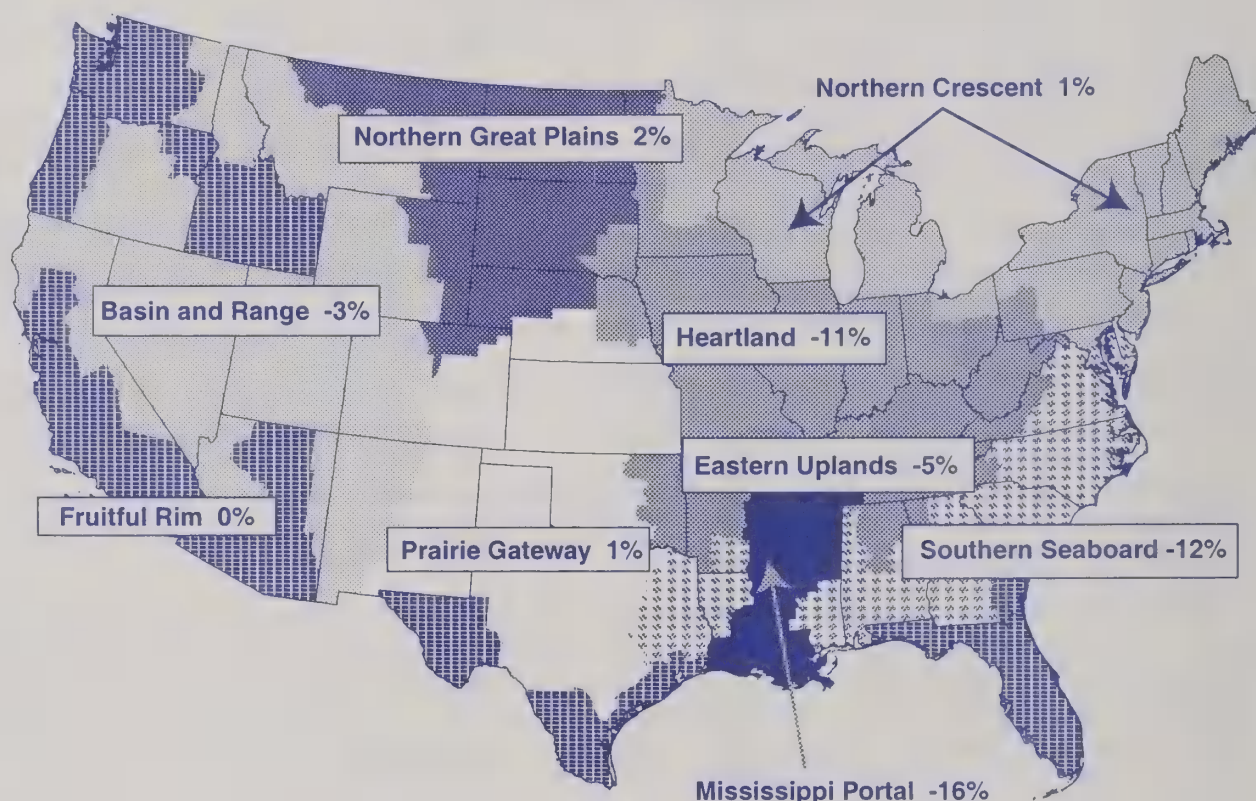
heifers for herd expansion. Hog inventories on March 1, 1999, were below a year earlier and pork production will finally fall below year-earlier levels in the fourth quarter of 1999. Milk production is expected to increase around 3 percent in 1999 as producers catch up with demand and hay prices fall. Despite lower exports, lower feed prices have kept broiler returns very favorable. Broiler production is forecast to rise 6.5 percent in 1999.

Regional Outlook for U.S. Farm Businesses

Cash-flow problems for farm businesses in 1999 are expected to fall most heavily on three regions of the United States—the Heartland, Mississippi Portal, and Southern Seaboard (figure 9). Given continued low prices for corn and

Figure 9

Projected change in average farm business net cash income, 1998-99



soybeans, average net cash income in the Heartland is expected to be 11 percent lower than in 1998. Nearly 20 percent of farm businesses in this region may not earn enough income to cover expenses in 1999, compared with 14 percent in 1998. Farm businesses in the Mississippi Portal are also expected to experience cash shortfalls in 1999. Higher direct government payments in the form of loan deficiency payments (LDPs) are not enough to offset lower receipts for cotton, rice, and soybeans. Average net cash income is expected to fall 16 percent from 1998. As in 1998, 23 percent of the region's farm businesses are not expected to cover cash expenses. In the Southern Seaboard region, low prices for tobacco, cotton, and soybeans are expected to reduce average net cash income 12 percent. Cash-flow problems could deteriorate further given the prolonged drought, particularly in the northern half of the region.

Unexpected declines in farm business earnings have led to debt repayment problems in several regions. Farm businesses in the Northern Great Plains and Prairie Gateway regions have had persistent debt repayment problems. Cash income will not support debt payments for 18 percent of farm businesses in the Northern Great Plains in 1999, a result similar

to both 1997 and 1998. In the Prairie Gateway 17 percent of farm businesses are expected to have debt repayment difficulty, slightly more than in 1998, but well below 1997. In the Mississippi Portal region, the share of farm businesses with debt repayment difficulties is expected to have doubled since 1997, reaching nearly 18 percent by 1999.

Commodity Specialization Outlook for U.S. Farm Businesses

Reflecting changes in commodity and input prices and production, 1999 net cash income is projected to drop by about 18 percent from a year earlier on soybean farms (figure 10, table 4). Hog and corn farms are close behind with declines of 12 and 15 percent, respectively. Key determinants of income adjustment of these farms are similar and include crop receipts that are expected to be 10 percent or more below those of 1998, an increase of more than a fourth in government payments, and expenses that remain almost flat with the previous year. In all cases, the increased payments are insufficient to offset the drop in commodity receipts. With tighter cash flows, a higher proportion of these farms will experience debt repayment problems. This is particu-

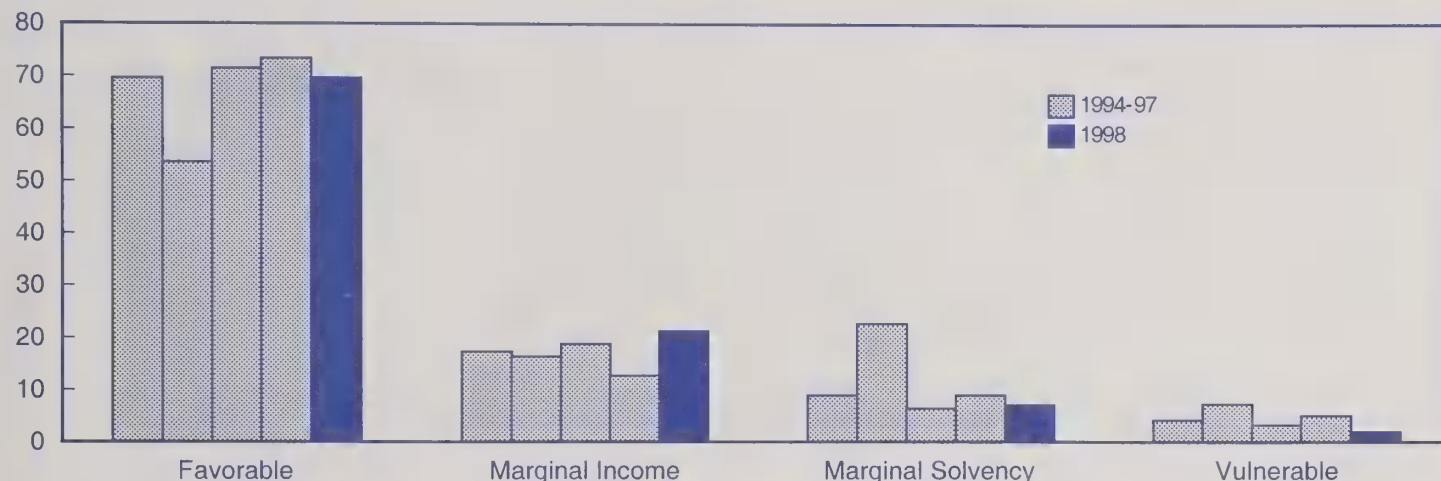
larly true for corn farms, reflecting the relatively high debt use by this farm type. Some farm types will likely see income increase or remain relatively flat during 1999, reminding us of the dynamic status of the U.S. farm economy. Farms that specialize in beef cattle should on average

realize income increases of 13 percent from 1998. Poultry and dairy farms are expected to have much smaller increases. Key determinants of income for these farms are expected increases in livestock receipts and flat expenses, reflecting lower feed costs.

Figure 10

Distribution of soybean farm businesses by overall financial performance

Percent



Source: Agricultural Resource Management, ERS, USDA.

Table 4--Change in net cash income by type of farm operation, 1999

Farm type	Percent change in net income	Key determinants of change
Other cash grains	-12	Crop receipts down 10%; expenses flat
Wheat	-1	Crop receipts down 10%; livestock receipts up 3%; government payments up; expenses flat
Corn	-15	Crop receipts down 10%; payments up; expenses up 1%
Soybeans	-18	Crop receipts down 12%; payments up; expenses flat
Cotton, tobacco, peanuts	-26	Crop receipts down 9%; payments up; expenses up 1%
Other crops	-12	Crop receipts down 6%; payments up; expenses up 2%
Specialty crops	1	Crop receipts up 1%; payments up; expenses up 2%
Beef cattle	13	Livestock receipts up 5%; crops down 3%; feed expense down 4%
Hogs	-12	Livestock receipts down 5%; crops down 12%; expenses flat
Poultry	1	Receipts flat; expenses flat
Dairy	5	Livestock receipts up 1%; expenses flat

ERS Constructs New Regions

The U.S. farm sector consists of a highly diverse set of businesses and farm households committed to living in rural areas and engaging in farm economic activities. Since the early 1900's, USDA analysts have sought to identify patterns in U.S. farming that might increase understanding of differences in financial performance of farms and the economic well being of farm households.

USDA's Economic Research Service (ERS) recently constructed a new set of regions depicting geographic specialization in the production of U.S. farm commodities. The new regions recognize both new capabilities and more relevant data, and overcome some longstanding problems with the older USDA Farm Production Regions. The new ERS regions are derived from four sources: the Farm Production Regions, a cluster analysis of U.S. farm characteristics,¹ the USDA Land Resource Regions, and National Agricultural Statistics Service (NASS) Crop Reporting Districts. Electronic files linking counties to the new Farm Resource Regions are online at the ERS website (www.econ.ag.gov/whatsnew/issues/regions).

Background

County clusters, based on types of commodities produced, have shown that a few commodities tend to dominate farm production in specific geographic areas that cut across State boundaries. The climate, soil, water, and topography in localized geographic areas tend to constrain the types of crops and livestock that will thrive there.

The older Farm Production Regions, in following State boundaries, necessarily group unlike areas together because a single State often encompasses different soils and topography. For example, the old Appalachian region, comprised of Tennessee, Kentucky, North Carolina and Virginia, contains the Appalachian Mountains, Piedmont, and Coastal Plain areas, all of which have quite different agriculture.

In constructing the new regions, ERS analysts identified where areas with similar types of farms intersected with areas of similar physiographic, soil, and climatic traits, as reflected in USDA's Land Resource Regions. ERS analysts then conformed these intersecting areas to follow the boundaries of NASS Crop Reporting Districts, which are aggregates of counties. With more data available at the county level, geographic representations need no longer follow State boundaries.

The new Farm Resource Regions, by more accurately portraying the geographic distribution of U.S. farm production, will help analysts and policymakers better understand economic and resource issues affecting agriculture.

¹ J.E. Sommer and F.K. Hines. *Diversity in U.S. Agriculture: A New Delineation by Farming Characteristics*. AER-646, ERS, USDA, 1991.

Basin and Range

- Largest share of nonfamily farms, smallest share of U.S. cropland.
- 4% of farms, 4% of value of production, 4% of cropland.
- Cattle, wheat, and sorghum farms.

Northern Great Plains

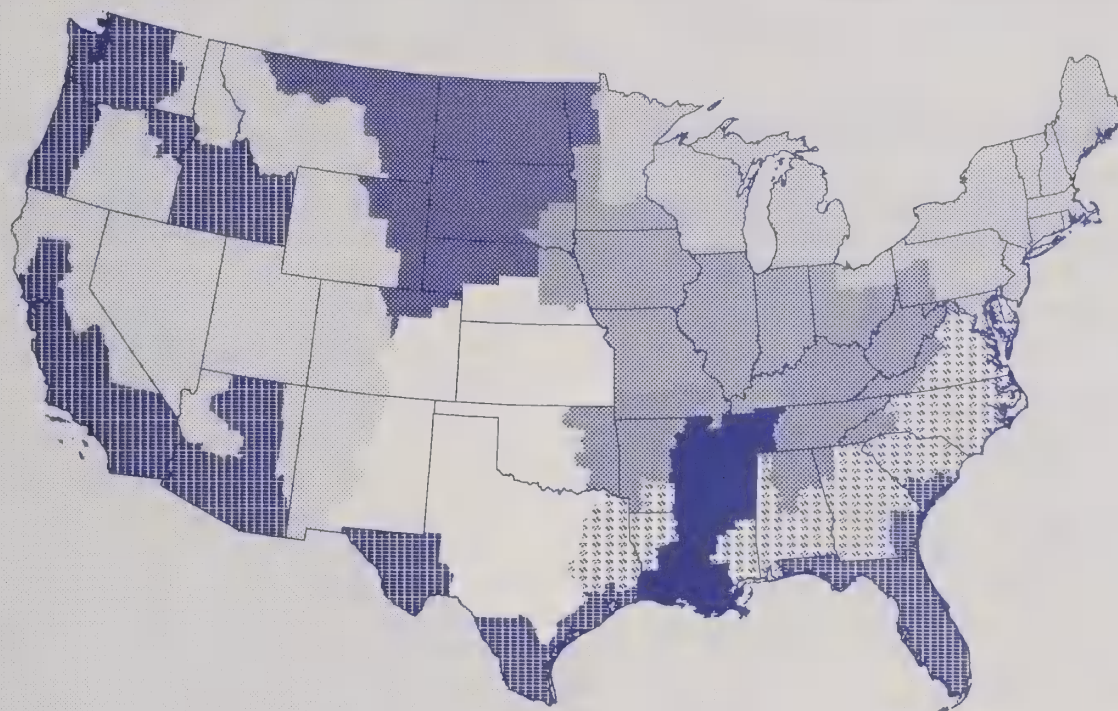
- Largest farms and smallest population.
- 5% of farms, 6% of value of production, 17% of cropland.
- Wheat, cattle, and sheep farms.

Heartland

- Most farms (22%), highest value of production, (23%), and most cropland (27%).
- Cash grain and cattle farms.

Northern Crescent

- Most populous region.
- 15% of farms, 15% of value of production, 9% of cropland.
- Dairy, general crop, and cash grain farms.



Fruitful Rim

- Largest share of large and very large family farms and nonfamily farms.
- 10% of farms, 22% of value of production, 8% of cropland.
- Fruit, vegetable, nursery, and cotton farms.

Prairie Gateway

- Second in wheat, oat, barley, rice, and cotton production.
- 13% of farms, 12% of value of production, 17% of cropland.
- Cattle, wheat, sorghum, cotton, and rice farms.

Mississippi Portal

- Higher proportions of both small and larger farms than elsewhere.
- 5% of farms, 4% of value of production, 5% of cropland.
- Cotton, rice, poultry, and hog farms.

Southern Seaboard

- Mix of small and larger farms.
- 11% of farms, 9% of value of production, 6% of cropland.
- Part-time cattle, general field crop, and poultry farms.

Eastern Uplands

- Most small farms of any region.
- 15% of farms, 5% of value of production, and 6% of cropland.
- Part-time cattle, tobacco, and poultry farms.

Sixty-four Percent of Surveyed Farmers Reported Entering 1999 in a Favorable Financial Position

In the 1998 Agricultural Resource Management Study, U.S. farmers and ranchers reported that they were financially holding steady with the previous year. The proportion of favorable operations varied by region.

ERS, in collaboration with USDA's National Agricultural Statistics Service, conducts an annual survey of farm and household finances. Since 1986, results of this survey have been used to establish estimates of farm financial position, considering both net income and degree of indebtedness. Results reported here are from the 1998 calendar year and are based on personal surveys with farm operators in February-April 1999.

On January 1, 1999, USDA classified 5.1 percent of commercial farm businesses as being in a vulnerable financial position based on their combined net farm income and debt/asset ratios (figure 11). The share of vulnerable farms was similar to a year ago when 5.6 percent were considered financially vulnerable. There was a 4.1-point reduction in the proportion of farm businesses considered to be in a favorable financial position, below the 1997 peak of 67.9 percent, but above 1995's 59.4 percent.

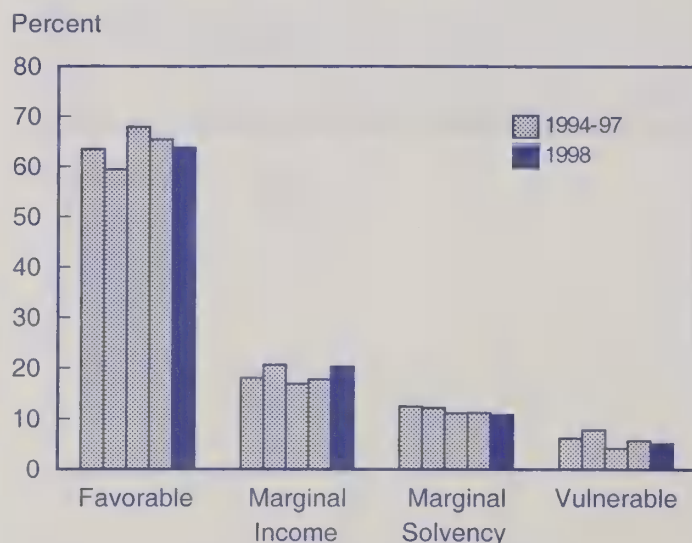
The largest decline in the share of favorable farm businesses occurred in the Eastern Uplands (16 percentage points), Mississippi Portal (15 percentage points), and the Basin and

Range (13 percentage points). The percentage of farms in a favorable financial position increased in the Northern Crescent Region. Compared with other regions, the Mississippi Portal had the lowest proportion of farm businesses in a favorable financial position at 54.5 percent (figure 12). A year ago, the Prairie Gateway held this distinction. As at the beginning of 1998, the Prairie Gateway and Northern Great Plains regions began 1999 with the highest shares of financially vulnerable farms.

The largest reductions in the share of financially favorable farms occurred in farm businesses that specialized in the production of cotton (down 11 percentage points), poultry (11 percentage points), and hogs (9 percentage points). Only 43.4 percent of hog farms were classified as financially favorable at the beginning of 1999, the lowest among all farm types. In contrast, 88.7 percent of tobacco and 74.1 percent of dairy farms were considered financially favorable. More than one in ten farms that specialized in the pro-

Figure 11

Distribution of farm businesses by overall financial performance

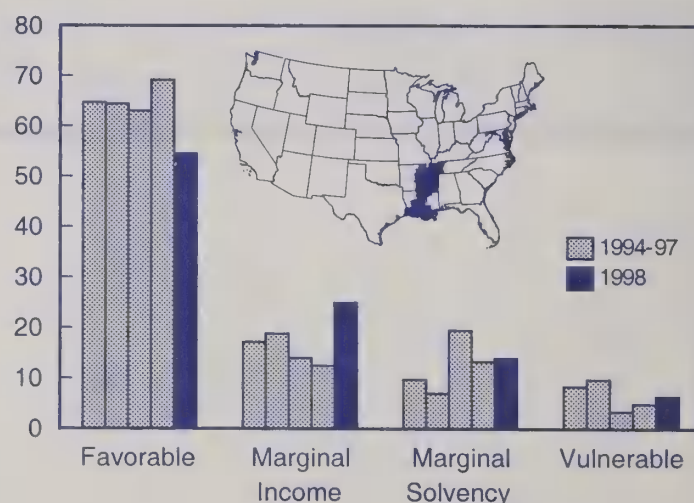


Source: Agricultural Resource Management, ERS, USDA.

Figure 12

Distribution of farm businesses in the Mississippi Portal region by overall financial performance

Percent



Source: Agricultural Resource Management, ERS, USDA.

duction of vegetables, fruit, and hogs were in a vulnerable financial position at the beginning of 1999.

Farm Business Income

The most comprehensive measure of farm business earnings, net farm income, declined from an average of \$58,951 in 1997 to \$57,706 in 1998 (table 5). Average gross cash income increased 10 percent with all major sources higher than in 1997. In relative terms, government payments increased the most, going from \$8,483 per farm in 1997 to \$14,694 in 1998. Farm costs were also higher, with 1998 cash expenses 5 percent above the 1997 average. Lower outlays for feed, livestock purchases, and fuel were more than offset by higher expenses for seed, fertilizer and chemicals, labor, and repairs and maintenance. All categories of fixed costs were higher in 1998, with the largest increases occurring for interest and rent and lease payments.

Higher government payments did not fully offset the impact of low grain prices on net farm income. Farms that specialized in the production of soybeans had the largest year-to-year decline in net farm income (50 percent) followed by cotton (36 percent) and wheat (22 percent). Regional impacts of low prices reflect the concentration of commodity production. The Mississippi Portal, which has a high concentration of cotton and soybean production, had the largest decline in net farm income between 1997 and 1998. Other regions with declines included the Eastern Uplands, Heartland, and Prairie Gateway.

The share of commercial farm businesses that had positive net farm income declined from 76.6 percent in 1997 to 74.6 percent in 1998. The lowest percentage during the 1990's

was in 1995, when 71.6 percent of farm businesses reported positive income.

At the beginning of 1999, only three regions had less than 70 percent of farm businesses with positive net farm income: the Northern Great Plains (67 percent), Basin and Range (65 percent), and the Mississippi Portal (69 percent). Farms specializing in hog production had the lowest proportion of farm businesses with positive net farm income in 1998 at 59 percent. Cotton (69 percent), fruit (65 percent), vegetable (68 percent), cattle (67 percent), and other livestock (66 percent) were the other farm types with a relatively low share of farms with positive net farm income.

Farm Business Balance Sheet

The financial position of commercial farms, as measured by the debt/asset ratio, has slowly improved during the last 5 years, going from an average of 18 percent in 1994 to the current estimate of 16 percent for 1998. Average assets and liabilities of farms with gross sales of \$50,000 or more increased in 1998. Land and buildings contributed most of the increase in total assets. Land and buildings represented 64 percent of total assets and their value increased 18 percent in 1998 to nearly \$695,000 per farm. Current assets also rose in 1998 due to increases in items such as crop inventories, accounts receivable, and checking account balances. Most of the increase in debt came from noncurrent obligations related to land and machinery purchases, which represented two-thirds of the \$170,728 average total debt.

The Northern Crescent and Basin and Range were the only regions where average debt declined between 1997 and 1998. Farm businesses in the Mississippi Portal, Eastern Uplands, and Prairie Gateway regions incurred the largest debt increases. These were the only regions where the average debt/asset ratio increased since 1997. At the end of 1998, the highest average debt/asset ratios were for farms in the Heartland (0.18), Prairie Gateway (0.19), and Mississippi Portal (0.18) regions.

Average farm business debt declined between 1997 and 1998 for farms that specialized in the production of wheat and cotton. These farm types have traditionally been more leveraged relative to other commodity specializations. The debt/asset ratio for cotton farms averaged 0.16 in 1998, well below the peak of 0.26 in 1996. Corn, tobacco, and poultry were the only farms that had an increase in average debt/asset ratios. Hog and poultry farms were more highly leveraged than other farm types, averaging debt/asset ratios of 0.30 and 0.27, respectively, at the end of 1998. Vegetable farms had the highest average debt/asset ratio among crop production specialties at 0.21.

Table 5--Financial data for farm businesses, 1997-98

Item	1997	1998
\$ per operation		
Income statement		
Gross cash income	278,688	306,356
Livestock income	98,105	105,060
Crop sales	136,068	142,400
Government payments	8,483	14,694
Other farm-related income	36,033	44,203
Cash expenses	217,013	227,758
Net cash income	61,675	78,597
Net farm income	58,951	57,706
Balance sheet		
Farm assets	923,585	1,078,557
Farm liabilities	157,466	170,728
Farm equity	766,118	907,829
Debt/asset ratio	0.17	0.16

Data for farms reporting sales of \$50,000 or more.

Source: Agricultural Resource Management Study.

Farm Household Incomes Remain Steady

Despite declining farm income, the incomes of farm operator households, on average, should remain about steady for 1999.

The forecast for 1999 indicates farm household income should be approximately the same as in 1998, even though average farm earnings per household are forecast to decline (appendix table 2). On average, farm operator households received \$59,700 in total income in 1998, mostly from off-farm sources (\$52,600 per household). Operator household income consists of all the income received by the operator household from farm and off-farm sources (table 6).

Table 6--Deriving farm operator household income, 1998

Item	Dollars per farm
Net cash farm business income 1/	14,357
Less depreciation	7,409
Less wages paid to operator and gross farmland rental income	1,180
Less adjusted farm business income due to other households	1,332
	Dollars per operator household
Equals adjusted farm business income	4,436
Plus wages paid to operator, net farmland rental income, and other farm-related earnings	2,670
Equals earnings of the operator household from farming activities	7,106
Plus earnings of the operator household from off-farm sources	52,628
Equals average farm operator household income	59,734

Note: This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income. See appendix table 2 for more detailed information about how farm operator household income is derived.

1/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations.

Source: U.S. Dept. of Agriculture, Economic Research Service, 1998 Agricultural Resource Management Study (ARMS).

The forecast of total operator household income is not highly sensitive to forecast farm sector income because, on average, farm earnings make up only a small share of total operator household income (figure 13). Most U.S. farms are very small, because only \$1,000 of gross agricultural sales are necessary to qualify as a farm. Approximately half of all farms have less than \$10,000 in gross sales. Households operating these very small farms necessarily rely on off-farm income.

Between 1997 and 1998 (the last year for which survey data are available), there was a statistically significant increase in average total household income and income from off-farm sources.

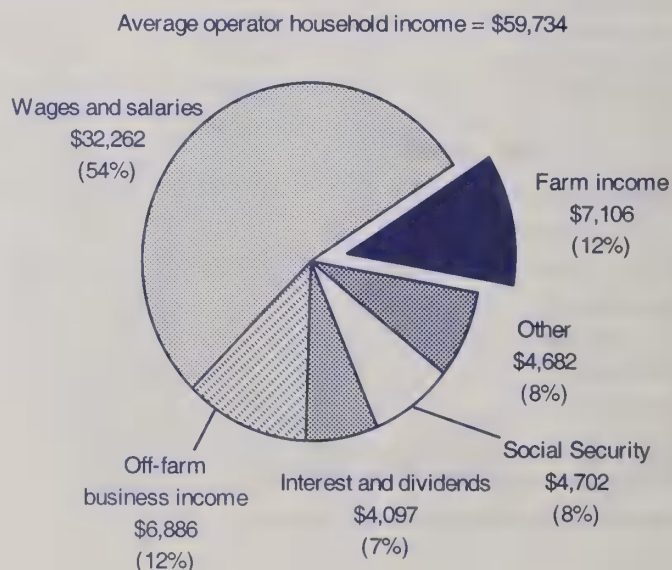
Reliance on Farming for Income Varies

Nevertheless, some farm households do depend on income from farming. Reliance on farming varies widely across the farm typology developed by ERS. The farm typology categorizes farms into more homogeneous groups, based largely

Figure 13

Sources of income for average farm operator household, 1998

Earnings from the farm average 12% of total farm household income



Source: Economic Research Service, USDA.

on occupation of the operator and sales class of the farm (see the box, Defining the Farm Typology).

Four groups of small farms—limited-resource, retirement, residential/lifestyle, and lower-sales—rely on off-farm sources for virtually all their income (figure 14). They actually lose money from farming, on average. Because these four groups make up 82 percent of all U.S. farms (figure 15), they pull the national average earnings from farming down to \$7,100. Excluding the four groups, average earnings from farming would be \$61,300.

Agricultural production by the four groups is low. Although they form an overwhelming majority of all farms, they account for only 16 percent of the value of agricultural production. In contrast, higher-sales small farms alone account for a similar share (17 percent) of production, with only 8 percent of farms. And, the large and very large farms groups together provide 53 percent of production, also with 8 percent of farms.

These last three groups—higher-sales small farms, large family farms, and very large family farms—all have positive average earnings from farming, and farm earnings increase among these groups as farm size increases (figure 14). The share of household income from farming also increases with

farm size, ranging from 43 percent of total household income for higher-sales small farms to 56 percent for large family farms and 84 percent for very large family farms. Note that households in these three groups also receive substantial off-farm income, on average. For example, households operating very large farms receive an average of \$33,200 from off-farm activities, although most of their income comes from farming.

Earnings of the operator household from farming activities are not a complete measure of economic well-being provided by the farm, however. They omit some resources the farm business makes available to the household. For example, depreciation is an expense deducted from income that may not actually be spent during the current year. Depreciation averages \$7,400 per family farm, but can be much higher for some farms. It averages \$17,000 for higher-sales small farms, \$34,600 for large family farms, and \$67,700 for very large family farms.

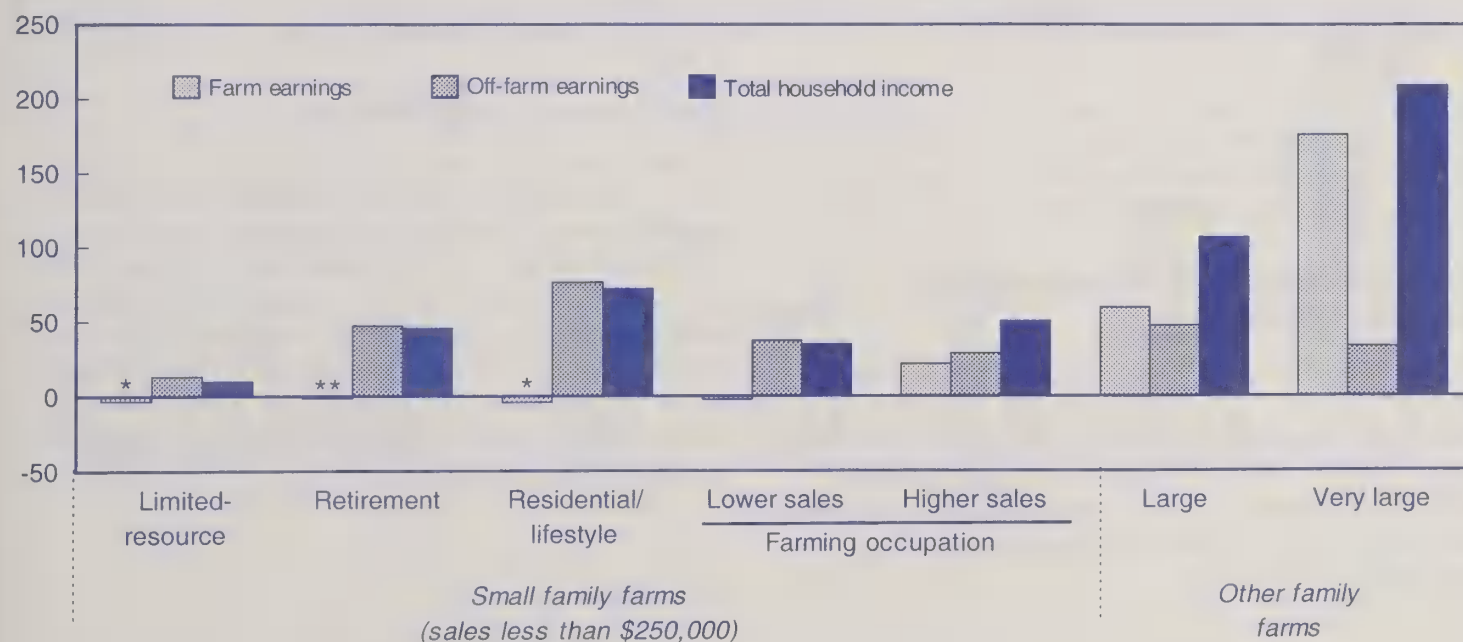
In addition, earnings of the operator household from farming activities do not reflect the large net worth of many farm operator households. Much their net worth is illiquid and not readily available for spending, since it is largely based on assets necessary for farming. However, some assets—such as inventories of livestock not used for breeding and

Figure 14

Average operator household income, by source and farm typology group, 1998

Households operating limited-resource, retirement, residential/lifestyle, and lower-sales farms depend on off-farm sources for most of their income

\$1,000 per household



*= CV for farm earnings estimate is between 25 and 50 percent.

**= CV for the farm earning estimate is greater than 50 percent.

Source: 1998 Agricultural Resource Management Study, ERS, USDA.

Defining the Farm Typology

*Small Family Farms (sales less than \$250,000)**

Limited-resource. Any small farm with: gross sales less than \$100,000, total farm assets less \$150,000, and total operator household income less than \$20,000. Limited-resource farmers may report farming, a nonfarm occupation, or retirement as their major occupation.

Retirement. Small farms whose operators report they are retired (excludes limited-resource farms operated by retired farmers).

Residential/lifestyle. Small farms whose operators report a major occupation other than farming (excludes limited-resource farms with operators reporting a nonfarm major occupation).

Farming occupation/lower-sales. Small farms with sales less than \$100,000 whose operators report farming as their major occupation (excludes limited-resource farms whose operators report farming as their major occupation).

Farming occupation/higher-sales. Small farms with sales between \$100,000 and \$249,999 whose operators report farming as their major occupation.

Other Farms

Large family. Farms with sales between \$250,000 and \$499,999.

Very large family. Farms with sales of \$500,000 or more.

Nonfamily. Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers.

*The \$250,000 cutoff for small farms was suggested by the National Commission on Small Farms.

inventories of crops—are liquid. Average livestock and crop inventories are \$24,800 for all family farms, but are much higher for higher-sales small farms (\$62,600), large family farms (\$113,500), and very large family farms (\$196,000).

Farms Account for Most Operator Household Wealth

Although many farm households rely heavily on off-farm sources for income, most operator household wealth comes from the farm, regardless of typology group (figure 16). The farm accounts for the smallest share of household net worth in the residential/lifestyle group, about 74 percent. Even for this group, however, the overwhelming majority of net worth comes from the farm.

Environmental Implications

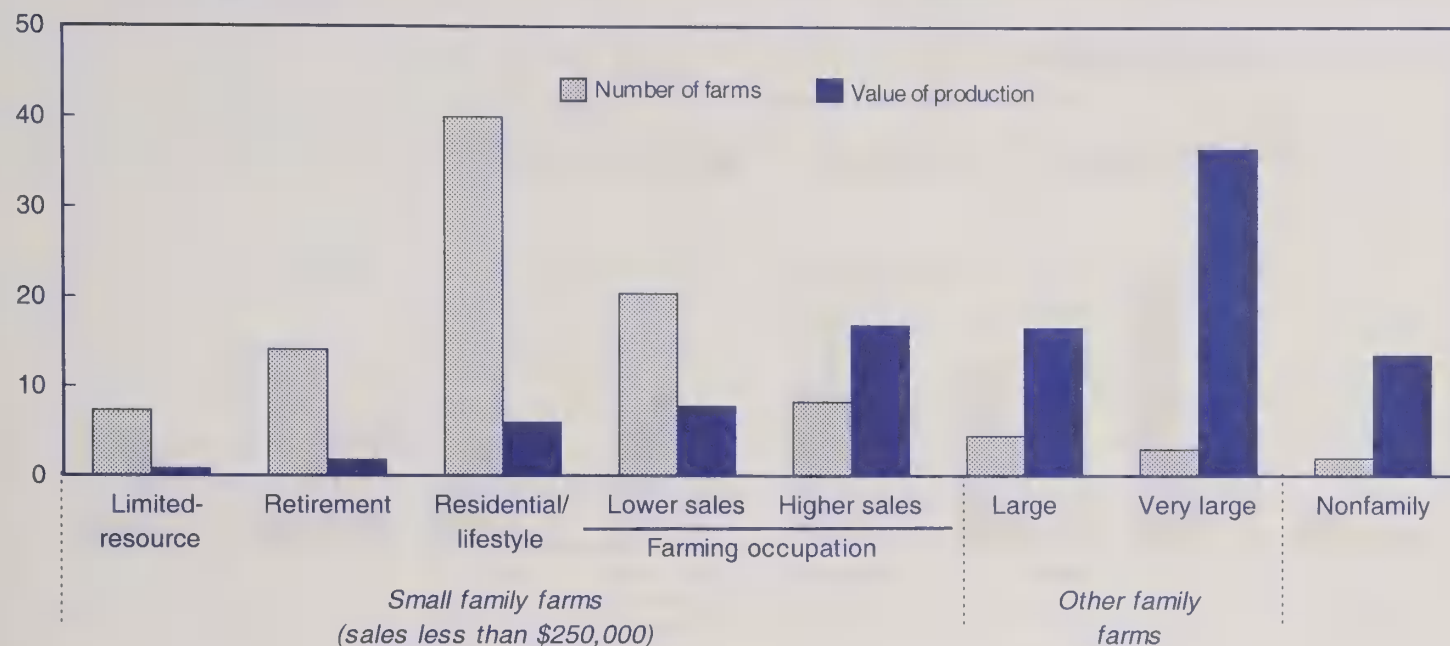
Although the five groups of small farms collectively account for only one-third of agricultural production, they have a disproportionate impact on the environment. Small farms hold about two-thirds of farm assets, including land (figure 17). Thus, they play a major role in natural resource and environmental policy. For example, small farms have about 84 percent of the land enrolled in the Conservation Reserve and Wetlands Reserve Programs (CRP and WRP). Retirement and residential/lifestyle farms alone account for half the land in the programs.

Figure 15

Share of farms and value of production, by farm typology group, 1998

Large family farms, very large family farms, and nonfamily farms account for about two-thirds of agricultural production

Percent of farms/production



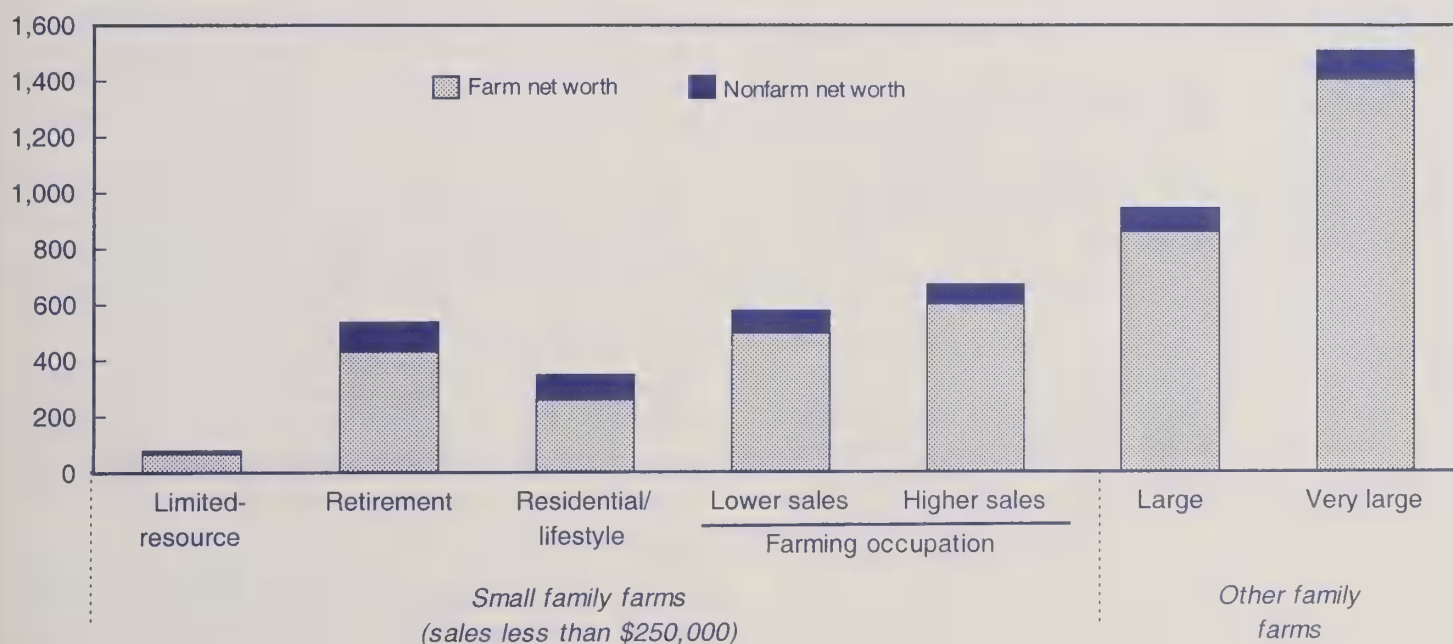
Source: 1998 Agricultural Resource Management Study, ERS, USDA.

Figure 16

Average operator household net worth, by source and by farm typology group, 1998

Regardless of typology group, most farm operator households' wealth comes from the farm

\$1,000 per household



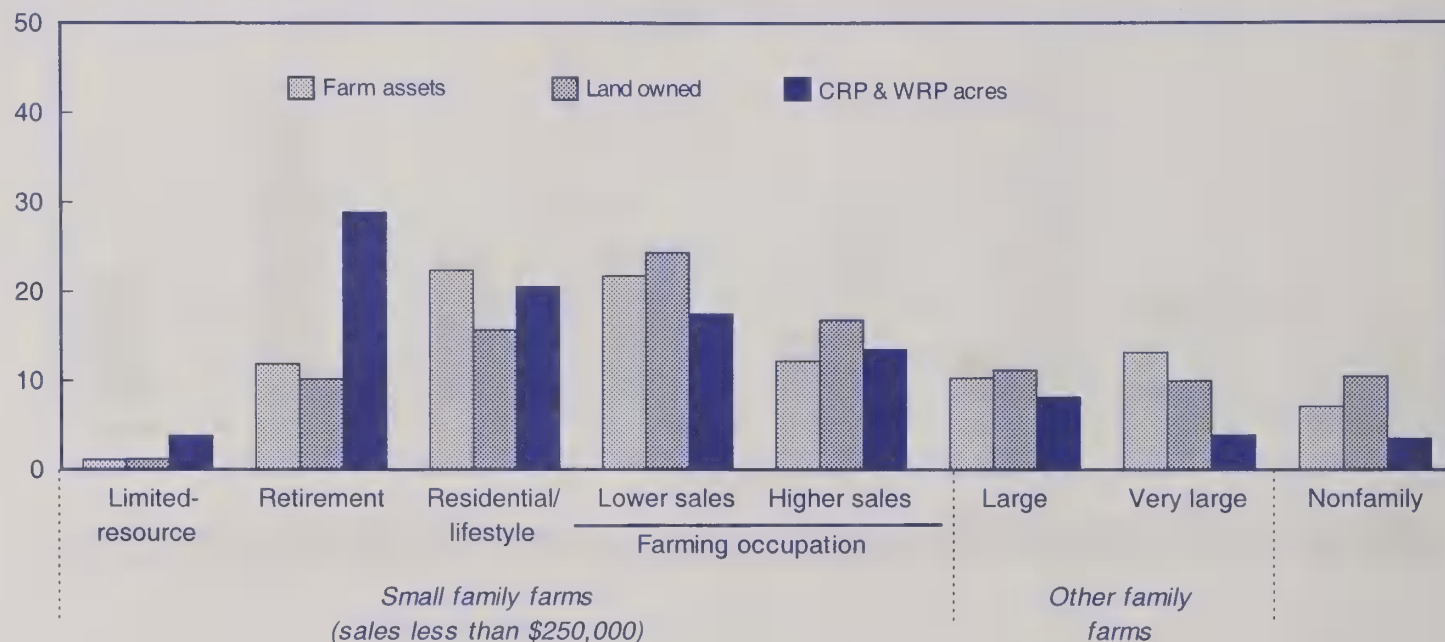
Source: 1998 Agricultural Resource Management Study, ERS, USDA.

Figure 17

Share of farms assets, land owned, and acres enrolled in the Conservation Reserve and Wetlands Reserve Programs (CRP and WRP), by farm typology group, 1998

Small farms account for two-thirds of farm assests (including land) and four-fifths of the acres enrolled in the CRP and WRP

Percent of assets/land/CRP & WRP acres



Source: 1998 Agricultural Resource Management Study, ERS, USDA.

Farm Debt Expected To Stabilize in 1999

Following increases of 6 percent in 1997 and 4.5 percent in 1998, farm debt may decline slightly in 1999. Many farmers will use anticipated record levels of government payments to reduce financial exposure by paying down debt.

Farm business debt is expected to stabilize in 1999. If the anticipated slight decline materializes, it will end 6 consecutive years of increases. With an expected decline of less than \$200 million, farm debt is expected to remain above \$172 billion at the end of 1999. Farm debt reached \$172.8 billion in 1998, the highest since 1985. A modest contraction in outstanding loan balances in 1999 would follow debt rises of \$9.4 billion in 1997 (6 percent) and \$7.4 billion (4.5 percent) in 1998, the largest consecutive annual increases since 1980.

While low commodity prices have reduced the cash receipts component of farm operators' incomes, additional government assistance will provide replacement funds to allow most farmers to meet their current debt service needs. Many lenders felt that farmers were able to meet 1998's debt obligations only because of government emergency assistance payments last fall. These lenders also have expressed concern that many of their borrowers would experience severe repayment problems in 1999 in the absence of a similar emergency-funding package this year. It now appears likely that some form of additional government assistance will be forthcoming. Lenders are likely to exercise restraint in taking action against delinquent borrowers, anticipating that loan payments will be made, if slightly later than original loan terms specified.

In general, given the current large world stocks of grains, oilseeds, and cotton, prices cannot be expected to rebound dramatically in the near future. The prospect of cash receipts continuing near or below 1999 levels, coupled with uncertainty surrounding future government emergency assistance, is a cause of concern in the agricultural finance community. Indebted farm operators, encouraged by their lenders, will likely apply any surplus cash included in the ultimate 1999 assistance package to improve their balance sheets, reducing debt to limit financial exposure to future economic adversity.

Sector-wide net cash income in 1999 is expected to be about 4 percent below 1998, and down almost 10 percent from its 1997 record. The impacts of this decline have not been evenly distributed across all U.S. farm operations, and producers specializing in wheat, corn, soybeans, and hogs will likely continue to experience higher levels of financial stress in 1999.

Banks Provide 40 Percent of Agricultural Credit

Commercial banks are the largest source of credit for U.S. farmers, providing over 40 percent of the agricultural loan volume outstanding at the end of 1998 (table 7). Farm debt held by banks is expected to rise slightly in 1999, following an increase of almost 5 percent in 1998. Banks' share of the total farm debt market has increased over the past 10 years from less than 31 percent to almost 41 percent. While bank real estate loans (those secured by farmland) have risen rapidly in recent years, nonreal estate loans accounted for over 61 percent of bank loans to farmers at the end of 1998.

Examination of bank farm loan portfolios should give some indication of the financial condition of farm operations. Bankers have reported that, using market prices prevailing in the late summer of 1999, current credit analysis of producers of many commodities suggests that a growing number of borrowers may have difficulty cash flowing loans in the absence of additional government assistance. However, any deterioration in farm financial conditions has not been reflected in the performance of banks' farm nonreal estate loan portfolios through the first quarter of 1999. (Data are reported by banks in call reports filed with the Federal Reserve Bank.) Performance of bank real estate loan portfolios, reported only since 1992, show similar results. The reports suggest a sound current farm loan portfolio, compared to both other sectors of the economy and to previous periods of farm financial stress.

Bank charge-off rates, which reached 3.36 percent of non-real estate loans in 1986, remained below 0.2 percent in the first quarter of 1999 (figures 18 and 19). In contrast, non-agricultural commercial bank consumer loan charge-offs typically run in excess of 2 percent. In comparison, consumer credit card charge-off rates have exceeded 4 percent annually since the late 1980's, and are currently above 6 percent.

Guaranteed loans, which were not widely available during the mid-1980's, will make over \$2.7 billion available in 1999, with almost \$2 billion of this targeted for nonreal estate loans. This suggests that banks are not likely to suffer significant losses in 1999. Charge-offs will likely not rise during the remainder of 1999, as banks are now likely to move less

Table 7--Debt outstanding, by lender, December 31, selected years, 1984-99F

Lender	1984	1988	1992	1996	1998	1999F
	\$ million					
Real estate	106,697	77,833	75,421	81,657	89,615	89,559
Farm Credit System	46,596	28,445	25,408	25,730	28,888	28,583
Farm Service Agency	9,523	8,980	6,394	4,702	4,073	4,118
Life insurance companies	11,891	9,039	8,765	9,468	10,723	10,861
Commercial banks	9,626	14,434	18,757	23,276	27,168	27,703
CCC storage facility	623	21	2	0	0	0
Individuals & others	28,438	16,914	16,095	18,481	18,763	18,294
Nonreal estate	87,091	61,734	63,631	74,417	83,247	83,116
Commercial banks	37,619	28,309	32,912	38,344	42,842	42,560
Farm Credit System	18,092	8,766	10,346	14,015	16,812	16,320
Farm Service Agency	13,740	12,899	7,143	4,614	3,993	4,048
Individuals & others	17,640	11,760	13,230	17,444	19,600	20,188
Total debt	193,788	139,567	139,052	156,074	172,862	172,675
Farm Credit System	64,688	37,211	35,753	39,745	45,699	44,903
Farm Service Agency	23,263	21,879	13,538	9,316	8,067	8,166
Commercial banks	47,245	42,742	51,669	61,620	70,011	70,263
Life insurance companies	11,891	9,039	8,765	9,468	10,723	10,861
Individuals & others	46,701	28,694	29,327	35,925	38,363	38,482

F= forecast.

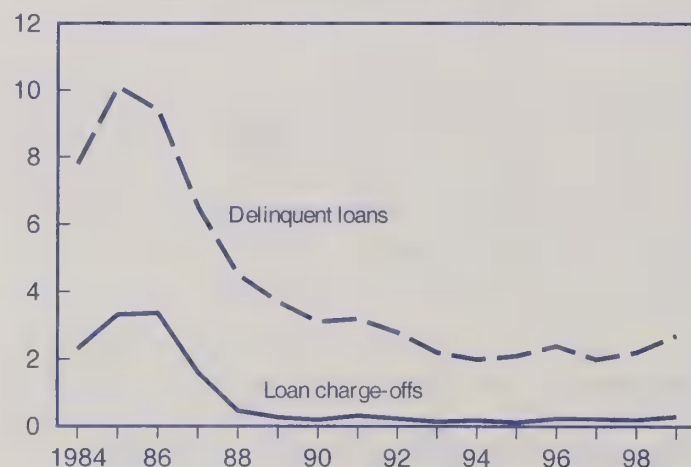
quickly to resolve problem loans, awaiting the final passage of a government farm financial assistance package.

Agricultural banks entered 1999 well capitalized, reporting ample funds to meet the credit needs of qualified borrowers. However, bank officers responding to first-quarter 1999 surveys conducted by the Federal Reserve Banks of Minneapolis, Chicago, Kansas City, Dallas, and Richmond indicate widespread concern. While more bankers in each region report a softening in farmers' demand for loans relative to a year earlier, and most reported higher availability of funds for qualified borrowers, most also reported lower loan repayment rates, higher numbers of renewals and extensions, and increased collateral requirements.

Figure 18

Bank farm nonreal estate loan problems remain low relative to mid-1980's

Percent of loans

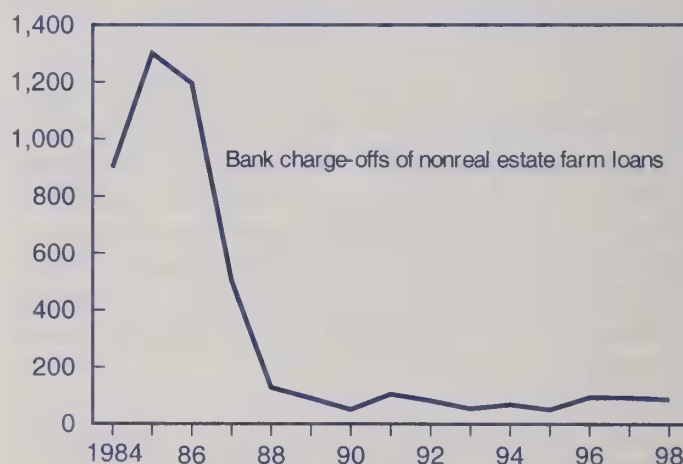


Source: Bank Call Reports.

Figure 19

Farm nonreal estate loan defaults remain small relative to 1980's

\$ million



Source: Bank Call Reports.

Farmers' Use of Repayment Capacity To Rise in 1999

While the rise in debt in recent years may cause additional financial difficulty for some farm operators, it does not indicate widespread financial distress in the farm sector. Nevertheless, farmers are expected to use their available credit lines more fully in 1999. Lenders generally require that no more than 80 percent of a loan applicant's available income be used for repayment of principal and interest on loans. For farm operators, this income available for debt service (measured as net cash income plus interest) can be used to determine the maximum amount of loan payment the farmer could make. Given current market interest rates and

an established repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers.

Debt repayment capacity utilization (actual debt expressed as a percentage of maximum feasible debt) effectively measures the extent to which farmers are using their available lines of credit. This ratio indicates that, in 1999, farmers are expected to use over 59 percent of the debt that could be supported by their current incomes (figure 20). This is the highest since 1986, but it is substantially below 1979-85, when farmers consistently used more than 70 percent of their debt repayment capacity. Nevertheless, debt repayment capacity utilization has been rising for the past 3 years. Further erosion of incomes, expansion of debt use, or an increase in interest rates (e.g., in adjustable-rate mortgages) could further tighten use of credit lines and signal a growing level of financial stress in the sector.

Farm real estate debt is expected to decline slightly in 1999, despite creditors' desire to obtain additional security for loans for any purpose. Nonreal estate debt is also anticipated to decline slightly in 1999.

Standard Financial Performance Measures Vary by Typology

The financial condition of farm operator households and the financial performance of farms they manage differ considerably among household units. Analysis of 1998 ARMS data illustrates the diversity of U.S. farm operations, as evidenced by comparison of farm operator households classified by ERS' farm typology. This classification system

recognizes the increasing contribution of income from off-farm sources to the financial well-being of farm operator households, especially those with limited farm sales.

Application of farm business financial performance measures to operations in various typology classes reveals notable differences among farms in various typology groupings (table 8). When off-farm income is excluded from the analysis, overall financial performance measures indicate that over 58 percent of all farm operator households were in a favorable financial position, based solely on farm income. Over 60 percent of small family farms managed by operators that identify farming as their primary occupation were classified as favorable, as were almost 69 percent of retirement farms.

While less than 5 percent of all farms were classified as vulnerable at the end of 1998, almost 10 percent of limited resource farms were considered in this class, as were about 6 percent of residential/lifestyle farms. Over 51 percent of all vulnerable farms were in the residential/lifestyle class, and nearly 15 percent of vulnerable farms were limited resource. This is to be expected, since many low-sales farms do not produce profits in their farming activities. However, residential/lifestyle farms received average off-farm income of more than \$76,000, suggesting that their financial well-being was not dependent on farm income. In contrast, limited resource farms received about \$13,000 in off-farm income.

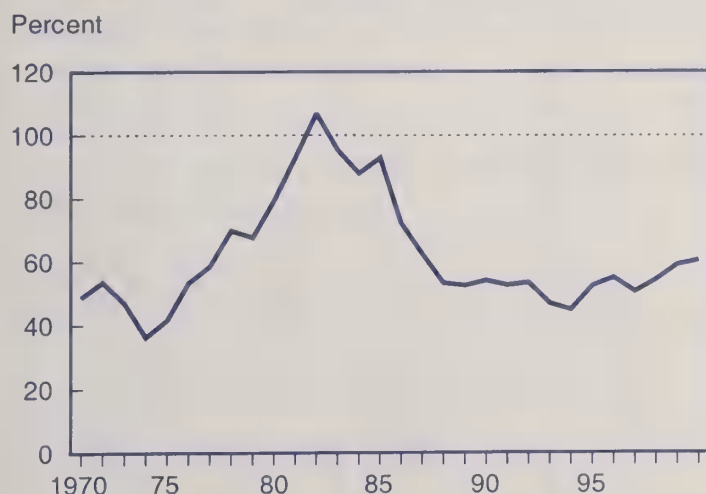
About 29 percent of all farms are small farms managed by an operator whose primary occupation is farming. About 4 percent of these were identified as vulnerable, and this group accounted for almost 24 percent of all farms classified as vulnerable.

Standard Financial Performance Measures Vary by Typology

Comparison of farm financial performance measures recommended by the Farm Financial Standards Council reveals differences in viability of farming units in the various typology classes (see page 18 for typology definitions). More than 54 percent of all farms were classified as retirement or residential/lifestyle in 1998. Generally, these operations were able to generate positive net farm income, but did not generate farm income sufficient to provide for positive returns to operators' labor and management. While retirement farms appeared to exercise fairly tight cost control measures, on average, farm income on both retirement and residential/lifestyle farms fell short of covering operating expenses. However, operators of these farms reported substantial off-farm household income, and their motivation in farming may be enjoyment of rural amenities, not maximization of returns to the labor used in their farming operations. Even though retirement and residential/lifestyle farms employed substantial assets and generated positive net earnings from their farming activities, they relied on off-farm income to meet living expenses and keep farm debt levels manageable.

Figure 20

Rising debt repayment capacity utilization remains below 1980's level



Actual debt compared with a hypothetical maximum debt that can be carried based on repayment.

Source: Economic Research Service, USDA.

Table 8--Selected financial performance measures, all farms, by farm typology classification, 1998

Table 8--Selected financial performance measures, all farms, by farm typology classification, 1998										
Item	Small family farms						Large farms \$250,000- 499,999	Very large farms Over \$500,000	Non-family farms	
	All farms	Limited resource	Retirement	Residential/ Lifestyle	Primary occupation					
					Low-sales Less than \$100,000	High-sales \$100,000- 249,999				
Number of farms (expanded)	2,064,709	150,268	290,938	834,321	422,205	171,469	91,939	61,273	42,296	
Percent of farms	100.0	7.3	14.1	40.4	20.5	8.3	4.5	3.0	2.1	
Number of farms (sample)	8,429	263	566	1,527	1,575	1,370	1,101	1,589	438	
Total household income (\$) 1/	59,734	9,924	45,659	72,081	34,773	50,180	106,541	209,105	N.A.	
Off-farm income (\$)	52,628	13,153	47,158	76,390	37,186	28,717	47,252	33,240	N.A.	
Family living expenses (\$) 2/	22,603	9,397	19,251	28,787	16,252	21,912	27,603	37,032	N.A.	
Overall financial performance										
Percent by financial performance:										
Favorable	58.5	55.3	68.5	52.9	59.3	66.4	66.7	59.5	52.6	
Marginal income	32.8	34.3	30.3	38.0	35.1	19.3	17.3	13.2	35.5	
Marginal solvency	4.0	0.9	1.1	3.2	2.1	9.6	11.0	22.0	7.6	
Vulnerable	4.7	9.5	0.1	6.0	3.5	4.7	5.0	5.4	4.4	
Percent by typology:										
Favorable	100.0	6.9	16.5	36.5	20.7	9.4	5.1	3.0	1.8	
Marginal income	100.0	7.6	13.0	46.8	21.9	4.9	2.4	1.2	2.2	
Marginal solvency	100.0	1.6	3.7	32.0	10.5	19.8	12.2	16.2	3.9	
Vulnerable	100.0	14.7	0.4	51.3	15.3	8.3	4.7	3.4	1.9	
Balance sheet										
Total assets (\$)	525,221	76,108	442,270	291,525	560,567	772,106	1,219,986	2,334,272	1,816,622	
Total liabilities (\$)	55,800	9,270	7,234	25,152	38,416	117,559	196,485	466,035	182,811	
Net Worth (\$)	469,421	66,838	435,036	266,373	522,151	654,547	1,023,501	1,868,237	1,633,811	
Financial performance measures										
Liquidity:										
Current ratio	3.2	2.3	13.3	3.4	4.4	2.9	2.9	2.3	3.2	
Working capital (\$)	38,559	3,865	23,303	12,429	36,884	75,710	135,954	226,778	143,944	
Solvency:										
Debt/asset ratio	10.6	12.2	1.6	8.6	6.9	15.2	16.1	20.0	10.1	
Profitability:										
Rate of return on assets (%)	0.4	-13.6	-0.9	-1.9	-2.8	0.0	2.2	8.1	6.3	
Rate of return on equity (%)	-0.6	-16.8	-1.1	-2.9	-3.7	-1.7	0.6	7.6	5.7	
Operating profit margin (%)	2.5	-102.1	-23.1	-27.3	-38.6	-0.1	7.6	19.0	20.1	
Net farm income (\$)	14,196	-591	2,936	1,324	1,031	25,277	52,866	213,083	112,402	
Repayment capacity:										
Term debt coverage ratio	3.1	0.7	4.1	1.4	1.5	2.9	3.5	4.5	5.5	
Financial efficiency:										
Asset turnover ratio	0.2	0.1	0.0	0.1	0.1	0.2	0.3	0.4	0.3	
Operating expense ratio (%)	79.8	134.3	104.0	120.1	97.3	77.4	73.6	72.0	73.8	
Economic cost/Output ratio (%)	103.3	210.6	126.8	138.0	146.5	106.6	98.1	85.6	83.4	

1/ Total household income equals off-farm income plus earning of the operator household from farming activities as defined in table 7.

2/ Family living expenses include food and household supplies, household rent/mortgage, utilities, appliances, furnishings, nonfarm transportation, medical expenses, insurance, contribution to retirement plans, clothing, education, hobbies, recreation, gifts, magazines, charitable contributions, etc.

Source: USDA, 1998 Agricultural Resource Management Study.

Generating returns to operators' labor and management is likely to be more critical to the 36 percent of farms that are classified as limited resource and those that are small farms headed by operators whose primary occupation is farming. These operators report a greater commitment of time to farming and less income from off-farm sources. Among these typology classes, average net farm income was negative only for limited resource operations, but farms with sales under \$250,000 reported 1998 farm income insufficient to provide adequate returns to operators' labor and management. These farming units ran negative operating profit margins, and, unable to cover the full economic costs of production, reported negative returns to assets and equity. Limited resource farms generally operate with small asset bases, use little debt financing, and generate fairly low levels of income. Moreover, low levels of working capital suggest that these operations have little cushion for financial emergencies. While the debt/asset ratio for these farms is slightly below the average for all farms, they are generally too small to operate efficiently, and, on average, total household income barely covers family living expenses.

In 1998, operators indicating farming as their primary occupation were likely to manage farms that, on average, also did not generate sufficient income to cover operating expenses, and, therefore, did not produce enough revenue to meet the full economic costs of production. On average, these farms have additional working capital and household off-farm income to contribute to family living expenses and to augment farm income shortfalls.

Farms with sales of \$250,000 or more appear to be viable self-sustaining economic units. They own assets averaging more than \$1 million, have manageable debt levels, generate sufficient farm income to cover operating expenses and economic costs, and have positive rates of return on assets and equity. While over 27 percent of very large farms report debt/asset ratios exceeding 40 percent, this class generates average operating profit margins of 19 percent. While farm households in these classes received average 1998 off-farm income of almost \$42,000, the majority of their income is from farm sources.

Farm Typology Groups Use Differing Levels of Debt Repayment Capacity

Debt repayment capacity utilization (DRCU) for the farm sector, as presented previously, is expected to rise from almost 59 percent in 1998 to over 60 percent in 1999. That measure is defined as the ratio of actual farm debt to the maximum feasible debt that could be supported by the current farm income of the sector. As described there, DRCU provides an historical overview of farmers' relative use of credit capacity from 1970 through the end of 1998.

Data collected in the 1998 ARMS provide for a more detailed analysis of DRCU, allowing the influence of off-farm income,

family withdrawals (living expenses), and payment of estimated income taxes to be included in the calculation of income available for debt coverage. The maximum principal and interest payment that a farmer could make based on that income, and the maximum loan that the payment could service, can be estimated more precisely for farmers within each farm typology classification. Comparison of actual total liabilities with maximum debt supportable by income from all sources gives a more comprehensive measure of each respondent's individual DRCU. The analysis does not include any nonfarm debt owed by the farm operator's household.

When the contribution of off-farm income to farm debt service is included, DRCU averaged 31 percent for all farms in 1998 (table 9). Retirement farms owed less than 7 percent of the debt that they could service with current income from all sources, while DRCU for limited resource operations averaged over 56 percent. DRCU for farms reporting the operator's primary occupation as farming averaged less than 50 percent, and that of very large farms averaged less than 41 percent.

Farms can often meet short-term income shortfalls with savings and through orderly liquidation of assets. However, if DRCU exceeds 1.2 (meaning that the operation owes 20 more debt than can be serviced with current income), this debt may be at risk of default. About 31 percent of the operations reporting debt outstanding at the end of 1998 had DRCU greater than 1.2, but these farms owed about 46 percent of all debt. Over 73 percent of indebted limited resource farms were in this high debt group, and these farms owed 80 percent of all debt reported by this typology class. Small farms headed by operators whose primary occupation was farming generally were slightly more likely to be in the high DRCU class, while large and very large farms were slightly less likely to be in this group.

Comparison of 1997 and 1998 ARMS data suggests that, generally, both the number of farms in the high DRCU group (figure 21) and the percentage of total farm debt owed by high DRCU operations (figure 22) declined during 1998. These results suggest a slight improvement in farm financial conditions during 1998. However, data reported by farms in the high-sales primary-occupation-farming group indicated that, while the percent of indebted farms with DRCU greater than 1.20 declined from 36 percent in 1997 to 32 percent in 1998, the share of debt held by these high DRCU operations rose from 47 percent to almost 52 percent. Similarly, the number of high DRCU large farms remained at about 25 percent of indebted farms in this group, but the share of debt owed by these operations rose from 36 percent in 1997 to more than 42 percent in 1998.

These results suggest that declining 1998 commodity prices had not, through the end of the year, adversely affected either the financial performance of farm operations or their ability to service debt.

Table 9--Debt repayment capacity utilization (DRCU) based on total household income, all farms, by farm typology classification, 1998

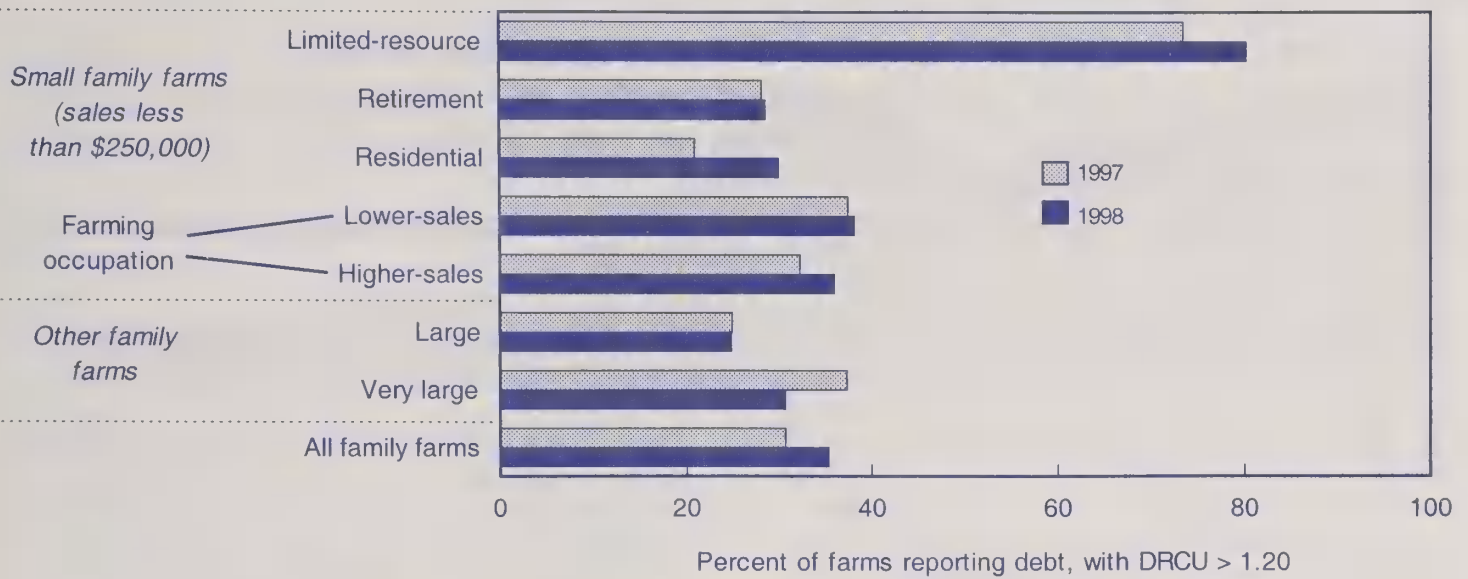
Table 3--Debt repayment capacity utilization (DRCU) based on total household income, all farms, by farm typology classification, 1990									
Item	All farms	Small family farms					Large farms \$250,000- 499,999	Very large farms Over \$500,000	
		Limited resource	Retirement	Residential/ Lifestyle	Primary occupation				
					Low-sales Less than	High-sales \$100,000-			
					Dollars per farm				
Number of farms (expanded)	2,064,709	150,268	290,938	834,321	422,205	171,469	91,939	61,273	
Number of farms with debt	892,497	42,858	38,246	359,944	183,042	130,127	68,638	49,921	
Percent of farms with debt	43.2	28.5	13.2	43.1	43.4	75.9	74.7	81.5	
Total household income									
Off-farm income	59,734	9,924	45,659	72,081	34,773	50,180	106,541	209,105	
Gross cash farm income	52,628	13,153	47,158	76,390	37,186	28,717	47,252	33,240	
Net farm income	84,651	7,361	12,255	13,780	35,800	161,036	348,769	977,037	
Income for debt coverage	14,196	-591	2,936	1,324	1,031	25,277	52,866	213,083	
Principal/interest payments	39,501	2,024	22,795	37,505	21,571	45,247	98,025	257,549	
Debt coverage margin	8,191	1,254	988	3,678	5,485	17,209	28,170	69,237	
Maximum loan payment	31,765	769	21,807	33,827	16,087	28,037	69,855	188,312	
Total liabilities	32,457	2,721	18,642	30,235	19,018	39,525	84,072	219,011	
Max feasible debt	55,801	9,270	7,234	25,152	38,416	117,560	196,485	466,034	
Debt repayment capacity utilization (%)	178,738	16,470	104,969	161,173	107,705	214,827	455,616	1,149,499	
	31.2	56.3	6.9	15.6	35.7	54.7	43.1	40.5	
Number with DRCU > 1.2	272,781	31,446	10,733	75,330	68,501	41,860	17,097	13,601	
Percent of farms	13.2	20.9	3.7	9.0	16.2	24.4	18.6	22.2	
Percent of farms with debt	30.6	73.4	28.1	20.9	37.4	32.2	24.9	27.3	
Percent of debt	46.4	80.0	48.3	32.6	52.7	51.5	42.2	38.2	

Totals include non-family farms.

Source: USDA, 1998 Agricultural Resource Management Study.

Figure 21

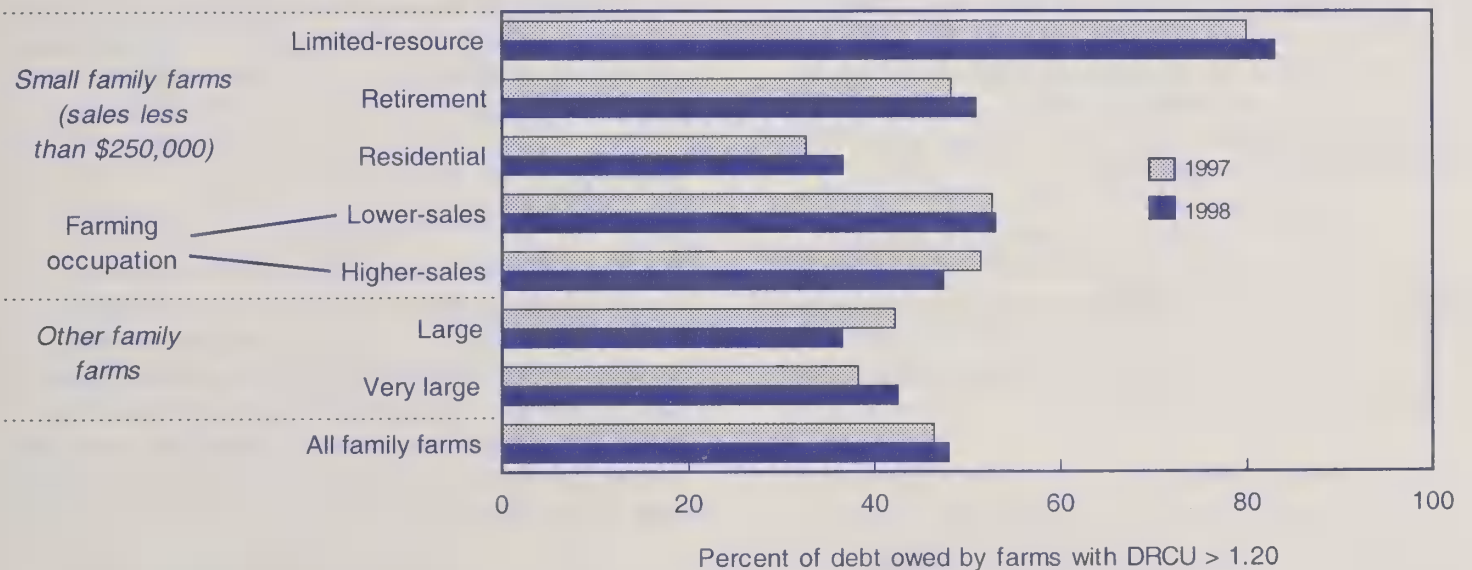
Fewer indebted farms had potential repayment problems (DRCU > 1.20) at the end of 1998



Source: 1997 & 1998 ARMS, USDA.

Figure 22

. and the share of debt owed by operations with DCRU > 1.20 declined from 1997



Source: 1997 & 1998 ARMS, USDA.

Farm Assets and Equity Values Continue Upward Through 1999

Despite the increase in debt in recent years, farm business balance sheets have shown steady improvement throughout the 1990's, especially since 1992. Debt-to-asset ratios have improved, as the 24-percent increase in farm business debt has been more than offset by the 24-percent rise in the value of farm business assets.

The value of farm real estate has risen 23 percent from 1993 through the end of 1999, while farm mortgage balances have increased about 18 percent. As a result, the degree of U.S. farmland leverage has declined substantially, providing most producers with an added equity cushion to lessen the impact of short-term declines in income. However, farm nonreal estate debt has been rising faster than the value of nonreal estate assets. During 1993-99, nonreal estate assets have risen about 4 percent, while nonreal estate debt has increased 26 percent.

Farm Real Estate Value Growth Moderates

Farm real estate, which represents the largest component of farm assets, is expected to increase in value in 1999, partly due to favorable returns to assets and relatively low inflation and borrowing costs.¹ Although the increase will be relatively small compared with previous years, the higher value of farm real estate should reflect the counterbalancing of lower prices in areas where agricultural uses dominate transactions and those areas where land values are increasing due to urban pressure and other factors.

Farm income is still strong enough across the country to maintain farmland prices. The value of U.S. farm business assets and equity is expected to continue upward through 1999. Although commodity prices in 1999 have generally fallen from 1998 levels, government payments have helped support returns to farm assets.

Equity Rises Slightly

Farm business equity is expected to rise as farm asset values rise more rapidly than farm debt. Equity by the end of 1999 is expected to be \$900.0 billion, \$8.6 billion above 1998, and nearly \$83 billion greater than in 1985 (figure 23). The value of farm business equity represents a large amount of economic wealth. As a comparison, the agricultural sector's

total assets are equal to twice the reported assets of the Nation's three largest automakers.

The long-term farm equity comparison is a little different if the numbers are adjusted for inflation. Real farm equity in 1999 deflated by the GDP chain-weighted price deflator is forecast at \$755.7 billion. In 1986, by comparison, farm equity had an inflation-adjusted value of \$705 billion. The peak of almost \$1,351 billion occurred in 1980. Consequently, farm sector wealth entering 1999 is 44 percent below the inflation-adjusted value of farm equity in 1980.

Farm Financial Ratios Remain Favorable

U.S.-level farm financial ratios measuring profitability, solvency, liquidity, and efficiency generally remain favorable relative to 1998 (see Appendix tables 7 and 8). This reflects moderate growth in farm assets, farm equity, and returns to farm assets, as well as relatively low borrowing costs and inflation.

Debt-to-Asset Ratio Continues Downward Trend

The debt-to-asset ratio indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability. The lower the debt-to-asset ratio, the greater the overall financial solvency of the farm sector. The debt-to-asset ratio is forecast to be 16.1 percent in 1999, compared with 16.2 percent expected in 1998. The share of debt to total asset value has ranged from about 16 to 17 percent, after peaking at 23.0 percent in 1985.

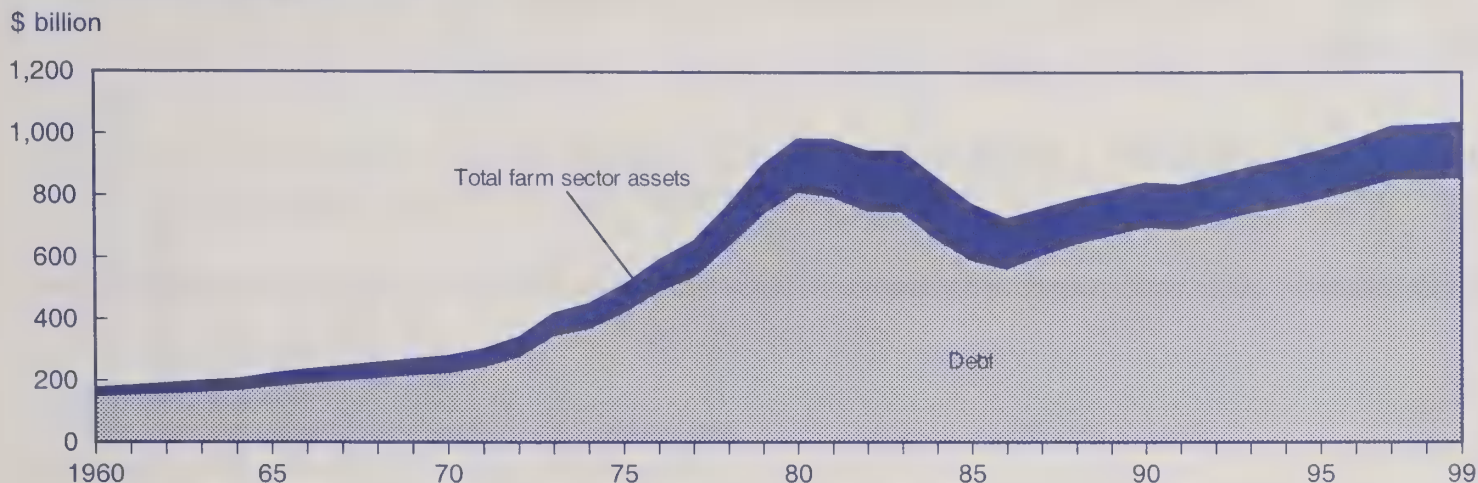
Real Cost of Debt Financing To Rise

The real net return on assets financed by debt, or RNROA, is a profitability measure that includes the real capital gains component of total returns. RNROA equals the total real rate of return on farm assets financed by debt less the real cost of debt. For example, the RNROA for 1999 is forecast at -3.8 (2.2 minus 5.4, Appendix table 6).

The RNROA is an average, and not a measure of the marginal cost of an additional dollar of borrowed funds at the

¹ The estimates of the value of U.S. farm business assets, debt, and equity are based on the latest available data, but are preliminary estimates. Final estimates of the farm business balance sheet, including the balance sheets for the 50 States, are not yet complete.

Figure 23
Equity increasing since 1986



Source: Economic Research Service, USDA.

farm sector level. Nor is it a measure of the marginal cost of funds to an individual farm operator. When the RNROA is positive and debt financing for the Aaverage@ sector farm is profitable, some farm operators will have marginal returns in excess of the marginal cost of debt, while others will have marginal returns less than their marginal cost of debt. For some, additional debt financing will be profitable. For others, it will not. In 1999, since the RNROA is negative at -3.8 percent, additional debt financing is not profitable.

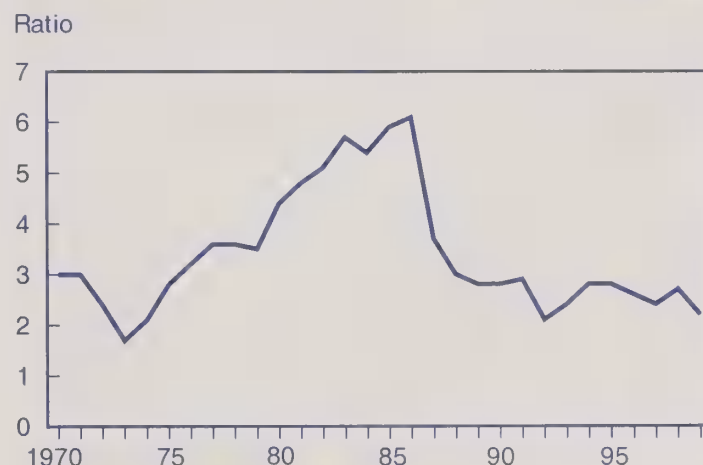
U.S. Farm Asset Values and Debt-to-Net Cash Flow

Net cash flow provides an indication of the total resources available to farm businesses for investment in the farm sector, and to meet current debt obligations. Net cash flow expands upon net cash income by accounting for both internal and external sources of funds.

As farm debt and interest expenses have fallen since the end of the "farm financial crisis" of 1980-86, the ratio of debt to net cash flow (after interest expenses) has fallen from as high as 6.0 in 1986 to 2.3 in 1993 (figure 24). The ratio of debt to net cash flow rose from 2.5 in 1997 to 2.9 in 1998, and is forecast to fall to 2.2 in 1999. This is within the relatively low range of 2 to 3 seen over the past 20 years. This means that there was \$2.90 of farm debt per dollar of cash flow in 1998, compared with \$2.20 in 1999. According to this measure, farm investors in 1999 (on average) have somewhat more cash resources per dollar of debt to buy farmland and farm machinery and to meet current debt obligations than the "average" farm investor in 1998.

Land values rise when debt-to-net cash flow is low. The ratio has been relatively low since the late 1980's, and farm-

Figure 24
Debt-to-net cash flow within "historic low" range



Source: Economic Research Service, USDA.

land values have risen, reflecting the fact that farm investors have relatively more cash resources to invest in farmland. Also, interest rates (and thus interest expenses) have been low, and returns to farm assets have been relatively strong.

Continued demand for agricultural land along the fringes of urban areas and demand for rural land for recreational purposes are also contributing to the growth in real estate values, especially in the Northeast and in some Western States.

Nonreal estate values are expected to remain at \$233 billion in 1999. The value of farm financial assets is expected to rise slightly. The value of machinery and equipment is expected to decline slightly. The value of crops stored, purchased inputs, and livestock and poultry are expected to remain near 1998 levels.

Low Commodity Prices Contribute to Reduced Farm Income for 1998

Net farm income was \$44.1 billion in 1998, down \$4.5 billion from 1997 and down \$10.8 billion from 1996. Net cash income was \$55 billion, down \$3.5 billion from 1997 and down \$2.6 billion from 1996.

Farmers and the economic health of the agricultural sector endured wide financial swings in 1998. Eighteen months ago our 1998 net farm income forecast of \$42 billion anticipated a financial downturn in the agricultural economy. We highlighted producers specializing in the production of wheat, corn, cotton, and hogs as those most likely to encounter difficulty. By late spring, winter wheat harvest problems were evident in northern parts of the Great Plains. With prospects for larger harvests during the summer, attention turned to grains and oilseeds. Farmers in the South, particularly cotton producers, experienced adversity in 1998 from drought, hurricanes, and flooding. Finally, producers endured dramatic declines in hog prices.

Production flexibility payments and loan deficiency payments under the 1996 Act, combined with supplemental support from last fall's appropriation bill, provided nearly \$13 billion in direct income assistance. These direct payments, \$4.7 billion more than in 1997, as well as reduced expenditures for inputs and increased receipts in some commodity sectors, allowed sector-wide earnings to reach \$44 billion.

Both net farm and net cash incomes fell in 1998. Net farm income, a value of production measure, is the farm operators' share of the sector's net value added from production activities within a calendar year. Net cash income, a solvency measure, is the cash earnings realized within the year that are available to farm operators to meet family living expenses, make debt payments, and replenish and increase the stock of production capital.

Lower commodity prices accounted for much of the decline in the value of U.S. farm production. This was due in large part to falling demand for exports and increased supplies in other exporting countries. Major field crops were particularly affected.

Cash Receipts

The value of crop production fell \$10.2 billion in 1998 to \$102 billion. Because there was little change in the volume of inventories held by farmers, sales of crops, which are reflected in cash receipts, accounted for most of the change.

Crop receipts fell \$8.9 billion, with feed crops contributing 47 percent of the decline (figures 25 and 26). Corn alone accounted for \$2.8 billion of the decline, with sorghum and hay contributing another \$600 million each. Oil crop receipts were down \$2.5 billion, all of which was due to lower soybean sales, and food grain receipts fell \$1.4 billion, due to lower wheat sales. Fruit and nut receipts fell \$1.3 billion while cotton sales fell \$332 million.

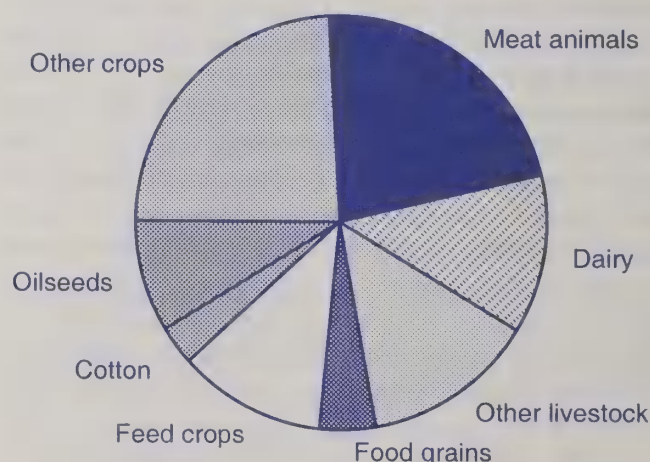
In contrast, vegetable receipts rose a modest 2.5 percent but vegetables account for only a little under 8 percent of total cash receipts. No single vegetable accounted for as much as 1 percent of total cash receipts.

Livestock Receipts Diverge

In 1998, the value of livestock production was down \$2.3 billion from 1997 to \$94.5 billion. However, this total masks the sharply contrasting livestock subsectors. Receipts for meat animals were down 12 percent, with sales of hogs and cattle declining 28 percent and 6.3 percent, respectively. These drops were in contrast to dairy, where the \$3.4-billion

Figure 25

Composition of 1998 cash receipts

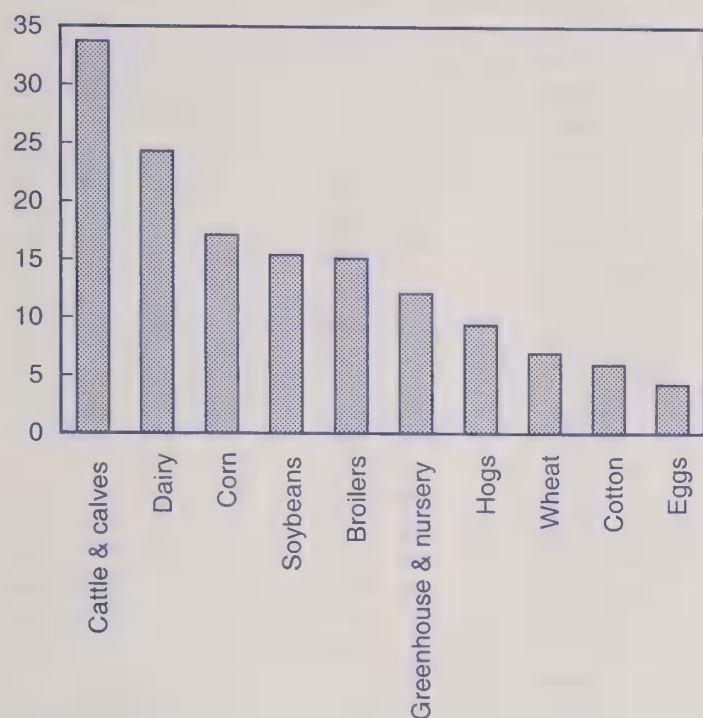


Source: Economic Research Service, USDA.

Figure 26

Top 10 commodities by value, 1998

\$ billion



Source: Economic Research Service, USDA.

increase in sales (up 16 percent) offset more than half of the drop in meat animal sales. Poultry sales were also up by more than half a billion dollars.

Supplies of hogs were large in 1998, reflecting the structural changes occurring within the subsector. The number of hogs produced under production contracts has expanded greatly in recent years. The contractee usually assumes market price risks for the hogs, but, as opposed to broilers, some hog production contracts are written with both contractor and contractee sharing in risk.

The cattle herd declined for the third consecutive year as producers continued to liquidate their herds in order to reach a balance with demand that will improve profitability. The large supplies of hogs and resulting low pork prices held down retail beef prices.

There was little change in receipt rankings (table 10). The most obvious was the drop in hogs' rank due primarily to lower 1998 hog prices.

Government Payments Were a Significant Component of Revenues for 1998

Government payments for 1998 changed substantially due to: 1) the importance of loan deficiency payments for 1998 crops, 2) a change in rules providing farmers the opportunity of taking 100 percent of fiscal year 1999 production flexibility payments in calendar 1998, and 3) supplemental

support for agriculture in the "Omnibus Consolidated and Emergency Supplemental Appropriations for Fiscal Year 1999." Government payments for 1998 were \$12.2 billion, up significantly from \$7.5 billion in 1997. Not since 1993 (\$13.4 billion) had payments been near this level.

Loan Deficiency Payments: For the first time under the 1996 Farm Act loan deficiency payments emerged as an important source of government payments. Posted county prices for major commodities in many locations dropped below the loan rate, making farmers eligible for loan deficiency payments. There were expectations that a significant share of corn production would qualify for loan deficiency payments with an average national price just slightly above the loan price of \$1.89. In fact, loan deficiency payments, at an average of \$0.18 per bushel, were paid on 57.9 percent of the corn production. Overall, farmers were eligible for loan deficiency payments on 1998 crops of \$2.8 billion, \$1.8 billion of which was received by the end of calendar year 1998.

Rule Change on Production Flexibility Payments: The 1996 Farm Act's production flexibility payments were pegged to a declining budget allocation. Regardless of commodity prices, participants would have received about \$5.6 billion from fiscal year 1999 funds. To estimate 1998 calendar year payments (from fiscal year budget allocations) it was assumed that 20 percent, or \$1.2 billion, of the next year's payment would be taken before December 31. Legislation late in the summer of 1998 changed the rule so that farmers could elect to take all of their fiscal 1999 production flexibility payments in calendar 1998 (as opposed to the 50 percent allowed in the 1996 Farm Act). It was expected that farmers—particularly those affected most by weather disasters and lower prices for grains and soybeans—would take advantage of additional fiscal 1999 payments available in 1998.

It turns out that the percentage of fiscal year 1999 production flexibility payments made in 1998 was around 20 percent, slightly higher than previous years. The provision allowing farmers to take all of the payments before December 31 might have been more widely used had there not been additional funding provided in the fiscal year 1999 Supplemental Appropriations Act passed in October 1998.

Fiscal Year 1999 Supplemental Appropriations Act: Almost \$6.0 billion of new funding for the agricultural sector was provided in the "Omnibus Consolidated and Emergency Supplemental Appropriations for Fiscal Year 1999." The bill, passed in October 1998, included about \$5.6 billion that can be considered direct government payments. About half of that amount was intended as supplemental payments to help offset the loss of overseas markets and subsequent lower commodity prices. The remainder was appropriated as disaster payments to assist farmers suffering crop losses due to severe climatic conditions. An amount of \$2.8 billion was disbursed in one-time supplemental payments by the end of

Table 10--United States: Leading commodities for cash receipts, 1998

Rank	Items	Value of receipts	Share of total receipts	Cumulative share 1/	Rank in prior year
		1,000 dollars	Percent		
	All commodities	196,761,410	100.0	--	
	Livestock and products	94,539,024	48.0	--	
	Crops	102,222,386	52.0	--	
1	Cattle and calves	33,723,930	17.1	17.1	1
2	Dairy products	24,312,307	12.3	29.5	2
3	Corn	17,096,376	8.6	38.1	3
4	Soybean	15,446,600	7.8	46.0	4
5	Broilers	15,146,578	7.7	53.7	5
6	Greenhouse and nursery	12,114,886	6.1	59.8	7
7	Hogs	9,396,165	4.7	64.6	6
8	Wheat	6,967,881	3.5	68.2	8
9	Cotton	6,013,197	3.0	71.2	9
10	Chicken eggs	4,349,521	2.2	73.4	11
11	Hay	4,116,666	2.0	75.5	10
12	Tobacco	2,989,298	1.5	77.0	12
13	Turkeys	2,661,706	1.3	78.4	13
14	Grapes	2,636,528	1.3	79.7	14
15	Potatoes	2,454,680	1.2	81.0	15
16	Oranges	1,954,612	0.9	82.0	17
17	Horses/mules	1,894,750	0.9	82.9	NA
18	Rice	1,741,391	0.8	83.8	18
19	Tomatoes	1,639,854	0.8	84.7	16
20	Lettuce	1,576,790	0.8	85.5	20
21	Apples	1,411,393	0.7	86.2	21
22	Sugar beets	1,258,445	0.6	86.8	22
23	Strawberries	1,028,784	0.5	87.3	25
24	Peanuts	1,017,893	0.5	87.9	24
25	Sorghum grain	972,330	0.4	88.3	19
	Government payments 2/	12,219,559	--	--	

-- = Not applicable.

Numbers may not add due to rounding.

1/ The cumulative percentage is the sum of the percent of U.S. total for each commodity and all preceding commodities.

2/ Government payments made directly to farmers in cash or Payment-in-Kind.

calendar 1998 (distributed proportionately to production flexibility payments). The bulk of the remaining funding is intended for disaster payments and will likely be disbursed during calendar 1999.

Aggregate Production Expenses Little Changed.

Total farm expenses dropped minimally to \$167.8 billion in 1998, from \$169.0 billion in 1997. Increases in some categories (e.g., hired labor and custom work) were offset by declines in others (e.g., farm-origin and manufactured inputs) as farmers sought to adjust to the crosscurrents of economic forces buffeting them. Favorable macroeconomic forces also benefited farmers, resulting in an absence of inflationary forces in the general economy, which portends stable prices for a broad array of purchased inputs. The relatively low fuel prices and interest rates were particularly beneficial.

Low prices that affect one segment of the agricultural sector can benefit another. Extraordinarily low prices received by

producers of feed grains translate into low feed costs for livestock producers. The value of livestock production declined only 2.3 percent in 1998 in contrast to the 9.1-percent drop in crop production.

The Economic Fortunes of States Varied Widely in 1998

North Dakota's 1998 net farm income rebounded 482 percent from the low of 1997 to exceed its 1990-97 average by 13 percent (table 11). In 1997, the State's farm sector suffered a dramatic 88-percent decline in net farm income. Wheat typically accounts for at least 30 percent of the State's agricultural production and its farmers encountered significant production problems as well as the low wheat prices experienced by all wheat producers.

Prices of hogs, soybeans, and corn were low by recent historical standards at the beginning of 1998 and declined throughout the year. Corn and soybeans are the two leading crops in terms of sales receipts and hogs rank third in terms

Table 11--Net farm income for states, 1997-98

State	1997			1998		
	Final agricultural output 1/	Net value added 2/	Net farm income 3/	Final agricultural output 1/	Net value added 2/	Net farm income 3/
1,000 dollars						
Alabama	3,883,572	1,556,224	1,092,759	4,026,259	1,689,380	1,209,086
Alaska	53,396	33,388	25,713	51,769	28,729	20,328
Arizona	2,431,975	1,012,213	567,050	2,493,196	1,155,909	700,203
Arkansas	6,406,033	2,704,934	1,843,418	5,922,802	2,449,404	1,594,954
California	27,641,705	12,441,833	6,437,403	25,854,096	11,552,452	5,366,042
Colorado	4,892,688	1,336,599	612,892	4,879,585	1,468,919	759,723
Connecticut	558,794	239,093	107,311	565,726	264,204	129,229
Delaware	839,675	162,148	86,136	876,454	195,247	118,055
Florida	6,810,979	3,360,164	2,113,745	7,029,148	3,522,454	2,225,846
Georgia	6,331,670	2,643,970	1,995,774	6,141,507	2,568,774	1,900,804
Hawaii	551,432	238,395	41,064	542,480	240,911	34,157
Idaho	3,624,362	1,360,450	615,223	3,698,353	1,567,982	840,138
Illinois	9,694,550	4,488,920	2,145,451	8,769,469	3,855,643	1,483,681
Indiana	6,189,425	2,481,183	1,264,481	5,633,271	2,108,080	801,602
Iowa	13,734,062	6,282,533	3,766,911	12,141,552	4,956,628	2,277,273
Kansas	9,555,135	3,272,774	1,754,682	8,661,954	2,896,977	1,496,048
Kentucky	4,274,979	1,951,881	1,314,658	4,458,793	1,980,132	1,313,038
Louisiana	2,416,101	1,096,018	565,676	2,091,227	902,317	373,780
Maine	536,187	146,925	39,766	557,485	173,734	62,700
Maryland	1,726,879	466,637	232,625	1,776,881	546,390	309,508
Massachusetts	603,717	300,371	182,161	557,541	253,565	130,282
Michigan	4,114,180	1,187,148	400,686	3,902,115	1,162,252	308,371
Minnesota	8,931,429	2,470,918	953,845	8,791,116	2,924,699	1,260,353
Mississippi	3,911,915	1,459,514	937,726	3,834,926	1,485,480	926,689
Missouri	6,125,135	2,377,516	1,371,203	5,392,662	1,818,509	763,110
Montana	2,249,904	822,769	296,979	2,083,869	837,871	355,137
Nebraska	10,521,550	3,802,484	2,010,999	9,776,889	3,430,131	1,758,910
Nevada	355,556	94,207	22,600	379,646	119,976	47,148
New Hampshire	178,528	58,721	16,433	175,628	55,230	11,881
New Jersey	899,928	379,293	156,090	875,619	338,820	117,366
New Mexico	2,118,427	828,211	505,350	2,092,565	895,593	571,187
New York	3,089,835	769,825	195,624	3,397,781	1,035,527	447,430
North Carolina	9,803,482	5,132,358	3,325,817	8,929,791	4,251,283	2,361,078
North Dakota	3,197,479	1,177,485	128,183	3,663,392	1,794,435	745,510
Ohio	6,291,547	2,879,550	1,806,684	5,791,504	2,461,986	1,298,533
Oklahoma	4,764,735	1,527,019	948,091	4,336,601	1,441,597	900,541
Oregon	3,975,494	1,803,094	597,748	3,797,316	1,746,723	515,110
Pennsylvania	4,542,453	1,141,818	552,249	4,685,961	1,249,936	662,070
Rhode Island	70,582	36,056	21,330	73,926	39,276	24,218
South Carolina	1,895,986	744,436	492,713	1,683,543	587,527	330,461
South Dakota	4,215,213	1,917,460	1,008,599	4,207,509	2,014,913	1,158,285
Tennessee	2,766,956	936,931	492,377	2,712,458	825,040	343,267
Texas	15,835,247	5,592,965	3,226,153	14,713,439	5,279,108	3,125,087
Utah	1,103,572	353,322	189,535	1,125,536	384,056	218,757
Vermont	568,115	187,260	108,196	614,581	222,162	141,950
Virginia	2,698,848	854,464	507,505	2,799,822	878,335	496,162
Washington	6,036,471	2,696,699	869,976	5,995,826	2,908,493	1,050,467
West Virginia	506,296	84,819	31,774	529,270	92,587	34,884
Wisconsin	6,510,887	1,817,540	435,371	6,812,720	2,308,698	908,453
Wyoming	1,136,350	392,665	207,889	933,940	242,981	59,774
United States	231,173,416	91,103,202	48,622,626	220,839,497	87,211,056	44,088,272

1/ Total value of all commodities and services produced in the sector.

2/ Final sector output less intermediate consumption outlays, net government transactions, capital consumption.

3/ Net value-added less payments to factors of production and is residual returns to operators.

of livestock receipts. Producers of these three commodities absorbed a substantial drop in income. The effects are clearly evident in the net farm incomes for Iowa, Illinois, and Indiana, where corn, soybeans, and hogs are the leading commodities. Net farm income in all three States fell more than 30 percent.

Milk prices climbed significantly through most of 1998 and dairy States experienced a reversal of fortunes. Milk prices were low in 1997 and States in which dairying is a leading component of their agricultural economy tended to suffer substantial declines in farm income. States in the Great Lakes region and Northeast generally fall into this group, with Wisconsin and New York being prime examples.

North Carolina and California—States that have tended to be immune to declines in farm income in recent years—experienced 1998 income losses of 29 percent and 17 percent, respectively. North Carolina ranks second in the production of hogs and tobacco, and its sales of these commodities fell 36 percent and 17 percent, respectively. The decline in hog receipts was due to low prices, but tobacco production declined when the assignment of marketing quotas was reduced in response to diminished demand.

Fruit and nuts produced in the Pacific Coastal States were affected by weak export demand following the economic turmoil in Asia. California accounts for all sales of almonds and walnuts and 92 percent of the grape sales. The combined sales of these three commodities declined \$1.1 billion in 1998. Cotton sales declined \$332 million, two-thirds of which occurred in California.

Recent analysis of Agricultural Resource Management Study (ARMS) survey data has shown a significant reduction in the percentage of feed crops used on farms where produced. The rapid structural change occurring in the livestock sector with regional shifts in production and consolidation into large operations (e.g., hogs in North Carolina and dairy in California) has led to a higher percentage of feed being purchased as opposed to being grown on the farms producing the livestock. Consequently, the share of feed crops sold on the open market is higher. For example, in 1996, the percent of corn used on farms where produced was revised from 20.46 percent to 16.73 percent. With a corn crop in excess of 9 billion bushels, this translates into an additional 350 million bushels of sales.

Placing the Income Situation in Context

There is a natural tendency to compare the farm income levels of recent years to those in 1996 because that was the last year of the traditional farm programs and farm income was at a very favorable level. To retain perspective, it must be remembered that 1996 was a truly exceptional year with record yields for major crops and prices that remained unusually high, given the large production levels.

Growth in the economies of Southeast Asia in 1995, 1996, and the early months of 1997 translated into demand for U.S. agricultural products and helped support commodity prices and boost farm income. These economies began to falter in the summer of 1997 and have yet to fully recover, which has depressed demand for U.S. agricultural commodities.

In 1998, economic difficulties in Japan led to a substantial depreciation in the yen, which has curtailed Japan's demand for imports and simultaneously lowered the prices of Japanese exports. These consequences of the declining yen mirror those resulting from sinking currency values in Southeast Asia and in larger countries such as Russia and Brazil.

Because the U.S. dollar is the currency to which individuals and companies in other countries seek to convert their capital in periods of economic crisis in order to avoid having its value depreciate along with the local currency, the dollar appreciated in value against the currencies of most of these countries. The consequence was a relative rise in the export price of U.S. agricultural products accompanied by a drop in demand in potential importing countries and a decline in competitiveness with other exporting countries.

Net farm income is a production based measure, and both the quantities of production and the market price are key determinants. Abundant supplies definitely depress prices but in turn mitigate the decline in farm income.

Net cash income is a solvency measure of cash earnings generated from business activities within the calendar year and thus available to meet family living expenses and make debt payments. It does not allow for replacement of capital stock consumed but does indicate if farmers can stay afloat. Normally, in years of lower prices, farmers maintain cash earnings by drawing down inventories. Crop harvests were big in both 1996 and 1997 and farmers carried over substantial stocks into 1998. When profit potential appears limited, farmers also reduce their cattle herds, which is reflected as livestock inventory liquidation and has occurred in each of the last 3 years.

Production Costs Rise Moderately Except for Livestock

Lower overall input prices helped farmers and ranchers in 1998. Livestock producers were especially helped by lower feed costs, although this meant reduced receipts for feed grain producers.

Acres planted to the 17 major U.S. crops declined 2.1 percent in 1998 and farmers and ranchers saw input prices fall an average 3.4 percent. Crop input prices on average were essentially unchanged from 1997 while livestock input prices fell 3.4 percent. There was wide variation in the prices of individual inputs, however.

Feed prices were down an average 12 percent for the year. This benefited livestock producers because of lower costs of production but had an adverse effect on feed crop producers because of lower sales. Producers of crops that are heavy fertilizer users, like corn, benefited from the 7.4-percent decrease in fertilizer prices and everyone benefited from the 17-percent drop in fuel prices.

ERS Institutes New Accounting And New Regions

The costs and returns estimates for some commodities will appear different this year than in the past. For corn, soybeans, cotton, peanuts, and cow-calf enterprises, ERS is revising its accounting methodology to conform with the new standards recommended by the American Agricultural Economics Association (AAEA) Task Force on Commodity Costs and Returns. For these same commodities, ERS is publishing regional estimates using new resource regions.

At a 1991 national meeting of agricultural economists from academia and government, statisticians, political scientists, extension workers, and farmers, there was a consensus that the profession needed a uniform set of standards for estimating commodity costs and returns. A task force was formed in 1992 "to recommend standardized practices for generating costs and returns estimates for agricultural commodities after a careful examination of the relevant economic theory and the merits of alternative methods."² After 6 years of study, the final recommendations have been issued.

As the major source of commodity costs and returns estimates for U.S. agriculture, ERS has fully supported the work of the Task Force and has been collecting data for 3 years in anticipation of adopting the recommended accounting practices. Beginning with this issue of Agricultural

Income and Finance Situation and Outlook, ERS will start publishing estimates using the new methodology and new reporting format where data are available (tables 12 and 13). Cost distributions for corn, soybeans, cotton, and peanuts for their survey year are also presented. In all future surveys, ERS will include questions that provide the necessary information for adopting the new methods. Next year, wheat and hog estimates will be converted to the new methodology.

In addition to the new accounting standards and for the five commodities listed above, ERS is also changing its reporting format to publish regional estimates using the new resource regions (for a description of the Land Resource Regions, see page 12). Their use will allow more standardization among commodities for comparing production costs and returns across regions. As with the new accounting standards, ERS will convert to the new regions for individual commodities as they are surveyed in the future.

Table 12--Returns above operating costs at differing yields and prices

	Yield		Price and net returns		
	Bushels		Dollars per acre		
Corn		1.89	2.00	2.25	2.50
	90	15.79	25.69	48.19	70.69
	110	53.59	65.69	93.19	120.69
	130	91.39	105.69	138.19	170.69
	150	129.13	145.69	183.19	220.69
Soybeans		5.26	5.50	5.75	6.00
	25	52.19	58.19	64.44	70.69
	30	78.49	85.69	93.19	100.69
	40	131.09	140.69	150.69	160.69
	50	183.69	195.69	208.19	220.69
Cotton	Pounds				
		0.52	0.60	0.65	0.75
	550	15.61	59.61	87.11	142.11
	600	41.61	89.61	119.61	179.61
	650	67.61	119.61	152.11	217.11
	700	93.61	149.61	184.61	254.61
Peanuts		0.20	0.23	0.26	0.30
	2,000	71.32	131.32	191.32	271.32
	2,500	171.32	246.32	321.32	421.32
	3,000	271.32	361.32	451.32	571.32
	3,500	371.32	476.32	581.32	721.32

Source: Economic Research Service, USDA.

²American Agricultural Economics Association, *Commodity Costs and Returns Estimation Handbook*, Ames, Iowa, July 20, 1998. This Handbook may be purchased from the AAEA Business Office in Ames, Iowa.

Table 13--U.S. corn production costs and returns, excluding government payments, 1996 (dollars per planted acre)

Item	Former method	Item	New method
Gross value of production (excluding direct Government payments):		Gross value of production:	
Corn grain	366.46	Primary product: Corn grain	366.46
Corn silage	3.47	Secondary product: Corn silage	3.47
Total, gross value of production	369.93	Total, gross value of production	369.93
Cash expenses:		Operating costs:	
Seed	26.65	Seed	26.65
Fertilizer, lime, and gypsum	47.19	Fertilizer	47.04
Chemicals	27.42	Soil conditioners	0.16
Custom operations 1/	11.30	Manure	0.60
Fuel, lube, and electricity	24.43	Chemicals	27.42
Repairs	18.81	Custom operations	11.30
Hired labor	2.77	Fuel, lube, and electricity	24.43
Other variable cash expenses 2/	0.30	Repairs	15.78
Total, variable cash expenses	158.87	Purchased irrigation water	0.30
		Interest on operating inputs	3.86
		Total, operating costs	157.54
		Allocated overhead:	
General farm overhead	10.07	Hired labor	2.83
Taxes and insurance	23.15	Opportunity cost of unpaid labor	28.99
Interest	19.09	Capital recovery of machinery and equipment	63.02
Total, fixed cash expenses	52.31	Opportunity cost of land (rental rate)	80.79
		Taxes and insurance	6.98
Total, cash expenses	211.18	General farm overhead	10.38
		Total, allocated overhead	192.99
Gross value of production less cash expense	158.75		
Economic (full ownership) costs:			
Variable cash expenses	158.87		
General farm overhead	10.07		
Taxes and insurance	23.15		
Capital replacement	48.59		
Operating capital	4.07		
Other nonland capital	12.64		
Land	86.05		
Unpaid labor	14.85		
Total, economic costs	358.29	Total costs listed	350.54
Residual returns to management and risk	11.64	Value of production less total costs listed	19.39
Harvest-period price (dollars/bu.)	2.82	Value of production less operating costs	212.39
Yield (bu./planted acre)	129.95	Supporting information:	
		Yield: 130 bushels per planted acre	
		Price: 2.82 dollars per bushel at harvest	
		Production practices: 15 % irrigated, 85% dryland	
		Farm capital structure: Farm operator and landlords, full-ownership assumed	

1/ Cost of custom operations, technical services, and commercial drying. 2/ Cost purchase irrigation water.

Source: Economic Research Service, USDA.

Distributions of total U.S. costs of production for selected crops

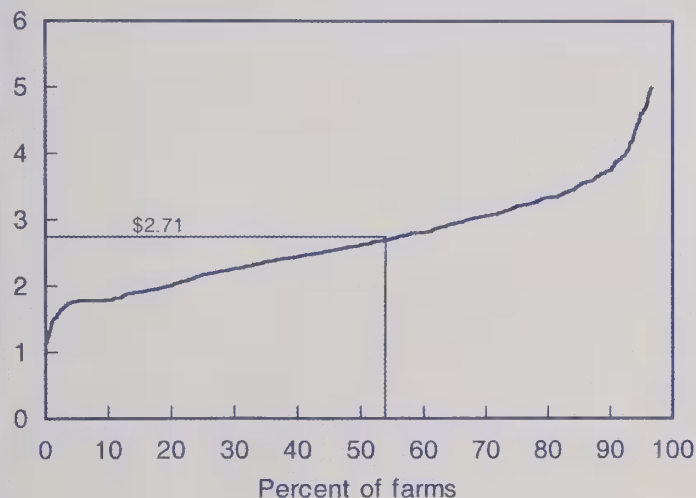
Using ERS' new methods for estimating production costs, a cost curve can be drawn to show how costs are distributed across farming operations. Costs are on a dollar-per-unit basis using farmers' expected yields rather than actual yields. Expected yields are used so that effects of weather and other unusual events can be factored out and to give the distributions some permanence over the short run. Each curve represents costs for the year in which farmers were surveyed through USDA's Agricultural Resource Management Study.

- Excluding government payments, corn growers in 1996 received an average price of \$2.71 per bushel. At this price, 55 percent of surveyed growers were able to cover total operating and allocated overhead expenses. With additional government payments, program participants would have been able to receive higher returns with more growers covering costs.
- Soybean growers in 1997 received an average price of \$6.50 per bushel. At this price, 68 percent of surveyed growers would have covered total costs.

- Cotton prices fell in 1996 and 1997, averaging 65.2 cents per pound in 1997. At this price, only 32 percent of growers would have covered total production costs. The median cost of surveyed cotton growers was 72 cents per pound.
- Peanut growers received an average 28.3 cents per pound in 1997, meaning 80 percent of growers were able to cover total costs. Peanuts, however, are grown under a quota system with minimum support prices.

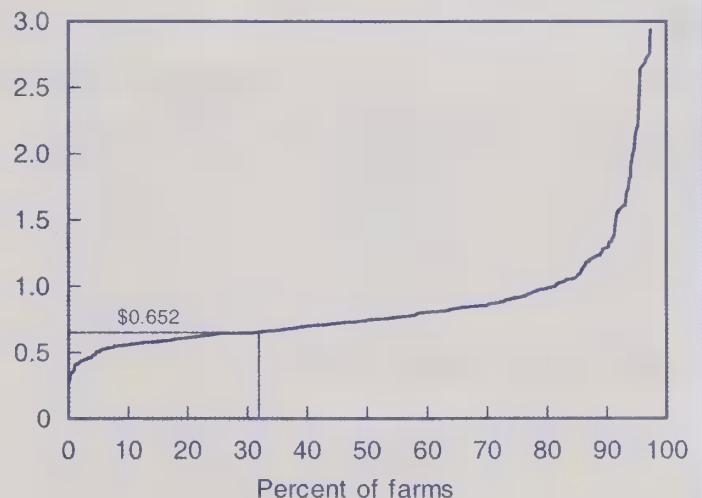
Corn, 1996

\$ per bushel expected yield



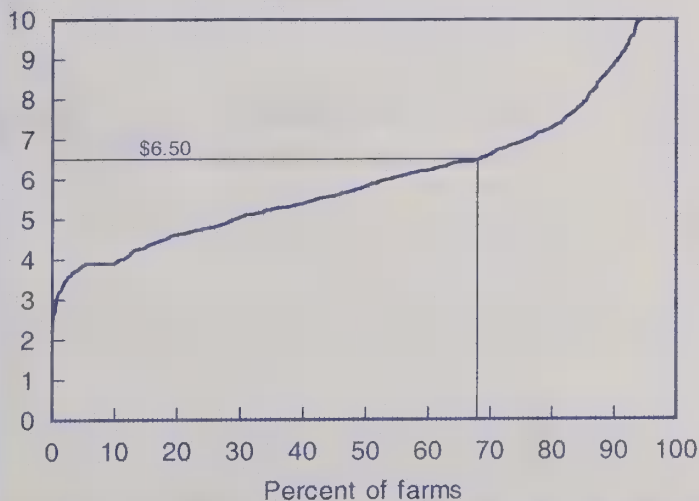
Cotton, 1997

\$ per pound expected yield



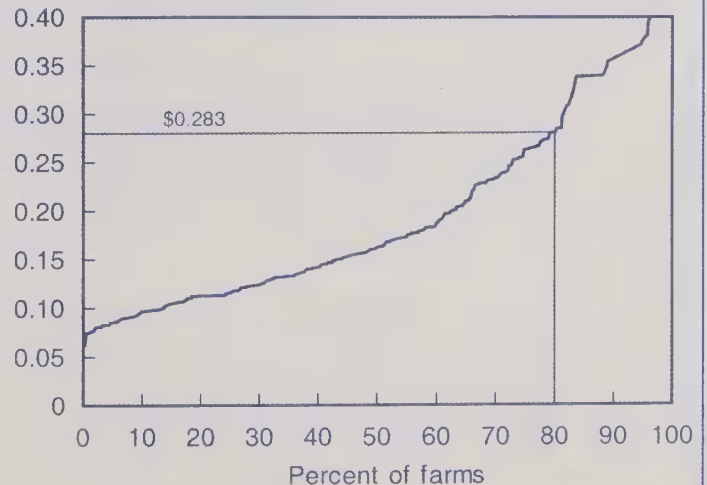
Soybeans, 1997

\$ per bushel expected yield



Peanuts, 1997

\$ per pound expected yield



Costs and Returns by Commodity

The average **corn** value of production less operating costs in 1998 fell 21 percent from a year earlier to \$109.90 per acre, due primarily to the drop in corn prices as U.S. farmers harvested their second largest corn crop. Corn yields increased an average of 6 bushels per acre from the prior year while harvested acres increased about 1 percent. Increased corn supplies outstripped increased demand, reducing harvest-period corn prices 24 percent to \$1.91 per bushel. Total corn production costs fell 85 cents per acre as the drop in operating costs slightly exceeded the increase in allocated overhead costs.

Falling fertilizer prices mainly drove the 1998 decline in corn operating costs. The corn crop uses more fertilizer than any other U.S. crop and fertilizer is the major component of the corn operating costs. The drop in fertilizer costs was partially offset by increases in the opportunity costs of land and increases in the capital recovery of machinery and equipment. Breakeven analysis reveals that \$1.14 per bushel was needed in 1998 to cover corn operating costs, while \$2.64 per bushel was needed to cover total corn production costs (appendix table 8). In comparison, the harvest-period price of \$1.91 per bushel was just slightly above the loan rate of \$1.89.

While corn yields were up for much of the country due to good weather conditions, corn producers in the Southern Seaboard and Fruitful Rim regions saw sharp drops in yields due to heat and drought. Some of their corn was contaminated by aflatoxin, limiting its usefulness in the marketplace. Southern Seaboard corn growers just covered their operating costs. The national impact of the reduced corn yields in these two regions was limited since farmers in these regions produce a relatively small share of the U.S. corn crop.

Record 1998 **soybean** acreage, spurred in part by a favorable loan rate for soybeans relative to other crops, was an important factor leading to large 1998 supplies that soon put downward pressure on market prices. On average, 1998 harvest-time soybean prices dropped 20.6 percent from 1997. Yield per planted acre remained high, matching 1997's 43 bushels per acre. Despite the high yield, the dramatic decline in prices from 1997 reduced gross value of production by 20 percent. With no significant change in costs of production and no change in yield, breakeven prices to cover operating costs and prices to cover total costs changed little on a national basis. However, the sharp reduction in market price at harvest prevented producers, on average, from covering total costs in 1998.

Producers in most regions except the Southern Seaboard and Mississippi Portal were able to cover total costs in 1997. Whereas producers in other regions benefited from high yields in 1997 when harvest prices were much higher, yields in the Southern Seaboard and the Mississippi Portal were 72 percent of the national average. In 1998 yields in the

Southern Seaboard approached the national average. Yields in the Mississippi Portal fell even further to 25 bushels per planted acre—58 percent of the national average. Persistent hot, dry conditions after planting stressed the crop. About 19 percent of the crop is irrigated in this region.

Area planted to **cotton** continued to fall across the United States in 1998. In California area declined 215,000 acres as wet, cool weather delayed planting. Some 36 percent of acreage in Texas was not harvested as drought and high temperatures led to large abandonment. Torrential rains delayed harvest in South Texas while Delta growers had to contend with two hurricanes and a tropical storm. Total lint production was down about 27 percent with the largest losses in Texas and California. Production rose in Alabama and North Carolina.

Gross value of cotton production fell 30 percent from 1997 to 1998 ranging from \$204 per acre in the Prairie Gateway to \$528 per acre in the Mississippi Portal. The breakeven price for operating costs ranged from 40 cents per pound in the Mississippi Portal and Southern Seaboard to 80 cents in the Fruitful Rim. Yields in the Fruitful Rim were only half the 1997 level (and breakeven costs were 46 cents). In terms of all costs, the Southern Seaboard had the lowest breakeven costs of 72 cents per pound and, aside from the Fruitful Rim, the highest costs were in the Prairie Gateway at \$1.07. All regions covered operating costs while only the Southern Seaboard covered all costs in 1998.

Peanut planted acreage continued to increase from 1997 to 1998. Within the principal growing States, Virginia acreage was unchanged. Peanut growers in North Carolina harvested all their acres planted. U.S. peanut production rose 11 percent in 1998, with yields rising in all States but Oklahoma. Yields rose 13 percent in Georgia and 19 percent in North Carolina due to near perfect growing conditions during most of the season. Texas growers recorded their highest production ever and tied 1997's record yields.

The average operating cost of growing peanuts fell 5 percent from 1997 to 1998 and overhead costs rose about 7 percent. Breakeven costs for peanuts were 12.8 cents per pound for operating costs and 16 cents per pound for overhead. The harvest-month price of 26 cents was just under the 29 cents needed to cover all costs. The Virginia/North Carolina portion of the Southern Seaboard continued to have the highest yields and had a 25-cent breakeven price for all costs. Growers in the Prairie Gateway needed 35 cents to cover all costs.

Dry conditions during the summer of 1998 through much of the southern third of the United States forced a resumption in **beef cow** liquidation. Many beef replacement heifers had already been sold and placed in feedlots during the spring of 1998, reflecting deteriorating forage conditions. Large beef supplies from increased female slaughter and record slaughter weights depressed beef prices during 1998. On average,

the gross value of production declined about 1 percent. However, as grain production rose in the second half of the year, feed ration costs to livestock producers improved. Concentrates and other feed expenses declined an average of almost 8 percent from a year earlier.

Concerns about lower **wheat** prices in relation to those for corn, soybeans, and other field crops affected planting decisions in 1998.³ The market year wheat price received by farmers dropped for the third year in a row, averaging \$2.70 per bushel in 1998. This was significantly below the \$3.38 in 1997 and the record \$4.30 in 1996. Higher yields in most areas were not enough to cover the lower prices, causing net returns to fall for the year. At an average yield of 39.67 bushels per planted acre, farmers saw a breakeven cash cost of production of \$2.30 per bushel.

Rice prices at harvest fell significantly from 1997 to 1998 and yields on average dropped moderately. As a result, gross value of production decreased and the decline more than offset reduced costs. Lower fertilizer and fuel costs accounted for the lower costs per planted acre. Net cash returns declined from \$134 per planted acre in 1997 to \$76 in 1998. California showed the largest yield decrease. Early season crop development was later than normal due to cold, wet spring weather. California harvest prices, however, increased from 1997 to 1998. The lower yield offset the rise in prices and gross value of production fell accordingly. Breakeven prices at harvest were \$7.96 per cwt for cash costs and \$12.02 for total economic costs, compared with a harvest-month price of \$9.35.

The Mississippi Delta region had the lowest cash expenses and total operating costs per acre in 1998 and California had the highest. California had the highest yield per acre and shared the highest market price with the Gulf Coast region. Breakeven prices at harvest for the Mississippi Delta region were \$6.45 per cwt for cash costs and \$9.92 for total economic costs compared with a harvest-month price of \$9.20. California breakeven prices were \$9.76 and \$14.61 compared with a harvest-month price of \$9.64.

Despite a decline in production, 1998 **barley** prices were lower than in 1997. Plentiful supplies of other feed grains, primarily corn, and weak export demand for all feed grains led to a barley price of \$1.95 per bushel, down from \$2.38 in 1997. Yields rose marginally in the Northern Plains, but net returns tended to decline.

Area planted to **sorghum** declined almost 5 percent in 1998. However, in Texas, acreage increased almost 6 percent due to drought there (sorghum is highly drought-resistant compared with other crops), but less than two-thirds was harvested

because of continuing drought. Nationally, production fell nearly 20 percent from 1997, with the largest losses in Arkansas (38 percent), Oklahoma (32 percent), and Texas (43 percent). In contrast, yields per harvested acre were essentially unchanged in Kansas (up 2 percent) the leading sorghum State, and increased in Nebraska (16 percent).

In spite of lower production, sorghum prices continued to fall in 1998, averaging \$1.71 per bushel. Although cash costs fell 10 percent per acre, gross value of production fell 38 percent per acre. At the average yield of 56 bushels per planted acre, farmers' breakeven costs of production were \$1.76 per bushel for cash costs and \$2.88 per bushel for economic costs. Growers in the Central Plains covered their cash costs, but residual returns were negative.

Gross value of production for **oats** was lower in 1998 than in 1997 because of lower prices and lower yields. Expenses were also down because of reduced fertilizer and fuel costs. With the drop in gross value exceeding the decrease in costs, net returns fell 45 percent. Residual returns to management and risk declined from 1997 for all regions. Net cash returns remained positive in all regions.

Sugar beet yields rose about 6 percent in 1998, pushing up receipts and returns for the year.

Monthly **hog** prices ranged from \$42 to nearly \$60 per cwt during 1997, but dropped sharply late in 1998. Market hog prices began 1998 around \$35 per cwt and moved to \$43 at midyear but fell to less than \$15 by December. Feeder pig prices were over \$70 at the start of 1998, but declined to less than \$40 per cwt by year's end. As a result, the value of market hogs and feeder pigs declined about 35-40 percent from 1997. Hog production costs were also lower in 1998 due mainly to a decline in corn and soybean prices. Feed costs in 1998 were almost 20 percent less than in 1997, while total variable costs were about 15 percent lower. Despite lower production costs, returns above cash costs were down about \$15 per cwt on farrow-to-finish operations, \$32 per cwt for feeder pig producers, and \$12 per cwt for hog finishers. The record low prices late in 1998 caused USDA hog cost and return accounts to show negative average returns above cash costs for the first time ever.

Dairy concentrate expenses dropped 10 percent in 1998 as available supplies increased from a year earlier. In addition, with milk prices reaching record highs, returns over concentrate costs were very high compared with recent years. Consequently, cash returns to dairying in 1998 increased in all six regions. After showing negative cash returns in 1997, the Corn Belt and Northeast regions posted cash returns of \$3.00 and \$1.99 per cwt of milk sold in 1998, respectively. At the U.S. level, cash returns increased from only 65 cents per cwt of milk sold in 1997 to \$3.42 in 1998. These improved returns should spur expanding producers to pick up the pace.

³ Cost estimates and cost-return relationships were prepared using ERS' traditional estimation methods. Estimates for wheat, barley, sugar beets, hogs, and dairy will be converted to new estimation methods as data are collected through annual farm surveys.

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Appendix table 1--Farm income indicators, 1994-99

	1994	1995	1996	1997	1998	1999F	Change from 1998 to 1999	1990-98 average	1999 as % of 1990-98 average
	\$ million						Mil \$	Percent	Mil \$
Gross farm income	216,077	210,743	235,741	238,669	233,059	233,576	517	0.2	214,396
Gross cash income	198,215	205,844	217,450	227,503	222,778	222,259	-519	-0.2	203,544
Farm marketings	181,264	188,055	199,138	207,611	196,761	192,477	-4,284	-2.2	184,382
Crops	93,085	100,954	106,182	111,076	102,222	96,300	-5,922	-5.8	94,337
Livestock and products	88,179	87,101	92,956	96,535	94,539	96,177	1,638	1.7	90,044
Government payments	7,879	7,253	7,340	7,495	12,220	15,520	3,300	27.0	9,141
Farm-related income	9,072	10,535	10,972	12,397	13,797	14,262	465	3.4	10,021
Noncash income	9,579	9,916	10,335	10,623	11,313	11,851	538	4.8	9,325
Value of home consumption	554	507	483	531	498	495	-3	-0.6	568
Rental value of dwellings	9,025	9,410	9,852	10,092	10,815	11,356	541	5.0	8,757
Operator and other dwellings 1/	8,586	8,841	9,220	9,525	10,260	10,672	412	4.0	8,231
Hired laborer dwellings	439	569	632	567	555	684	129	23.2	526
Value of inventory adjustment	8,283	-5,018	7,956	543	-1,032	-534	497	-48.2	1,527
Total production expenses	166,842	173,531	180,815	190,046	188,971	190,051	1,080	0.6	168,847
Intermediate product expenses	103,469	108,167	111,489	118,829	116,862	116,924	62	0.1	103,914
Farm origin	41,304	41,801	42,745	46,860	44,934	44,801	-133	-0.3	41,747
Feed purchased	22,631	23,829	25,234	26,332	25,031	24,102	-929	-3.7	22,705
Livestock and poultry purchased	13,300	12,510	11,299	13,818	12,691	13,487	795	6.3	13,412
Seed purchased	5,373	5,462	6,212	6,711	7,211	7,212	0	0.0	5,631
Manufactured inputs	24,399	26,155	28,602	29,235	28,274	28,834	560	2.0	25,302
Fertilizer and lime	9,180	10,033	10,934	10,933	10,653	10,435	-218	-2.0	9,481
Pesticides	7,225	7,726	8,526	9,027	9,128	9,061	-67	-0.7	7,390
Fuel and oil	5,311	5,426	5,978	6,230	5,585	6,417	832	14.9	5,620
Electricity	2,683	2,970	3,164	3,044	2,908	2,921	12	0.4	2,811
Other	37,766	40,210	40,142	42,734	43,654	43,289	-365	-0.8	36,865
Repair and maintenance	9,084	9,471	10,256	10,412	10,354	10,398	45	0.4	9,381
Other miscellaneous	28,682	30,739	29,887	32,322	33,300	32,891	-410	-1.2	27,484
Interest	11,544	12,602	12,981	13,524	13,593	13,769	176	1.3	12,387
Real estate	5,782	6,042	6,290	6,405	6,466	6,531	65	1.0	6,109
Nonreal estate	5,762	6,560	6,690	7,119	7,127	7,238	111	1.6	6,278
Contract and hired labor expenses	15,310	16,294	17,429	18,609	19,278	20,292	1,013	5.3	15,995
Net rent to nonoperator landlords 2/	11,548	10,951	12,995	12,938	12,626	12,425	-201	-1.6	11,427
Capital consumption	18,624	18,933	19,230	19,293	19,448	19,347	-101	-0.5	18,725
Property taxes	6,347	6,584	6,692	6,852	7,164	7,295	131	1.8	6,400
NET FARM INCOME 3/	49,235	37,212	54,926	48,623	44,088	43,525	-563	-1.3	45,548
Gross receipts of farms	207,491	201,902	226,521	229,143	222,799	222,904	104	0.0	206,165
Farm production expenses	162,467	168,908	175,826	184,778	183,597	184,605	1,008	0.5	164,366
Nonfactor payments	126,247	131,429	134,972	142,741	140,933	141,042	109	0.1	126,900
Intermediate product expenses	102,522	107,204	110,305	117,523	115,613	115,662	49	0.0	102,887
Capital consumption	16,323	16,497	16,688	16,626	16,671	16,516	-155	-0.9	16,404
Property taxes	5,598	5,762	5,853	6,000	6,275	6,394	119	1.9	5,663
Contract labor	1,804	1,967	2,126	2,591	2,374	2,470	96	4.0	1,947
Factor payments	36,221	37,479	40,854	42,037	42,664	43,563	899	2.1	37,466
Interest	11,166	12,201	12,557	13,081	13,134	13,316	182	1.4	11,991
Hired labor compensation	13,507	14,327	15,303	16,018	16,904	17,822	918	5.4	14,049
Net rent to nonoperator landlords	11,548	10,951	12,995	12,938	12,626	12,425	-201	-1.6	11,427
RETURNS TO OPERATORS 4/	45,023	32,993	50,695	44,365	39,203	38,299	-904	-2.3	41,799
Gross cash income	198,215	205,844	217,450	227,503	222,778	222,259	-519	-0.2	203,544
Cash expenses	147,081	153,239	159,936	169,029	167,825	168,917	1,092	0.7	148,833
Cash expenses, excluding net rent	134,158	140,892	145,512	154,647	154,350	155,064	1,319	0.9	136,008
Intermediate product expenses	102,522	107,204	110,305	117,523	115,613	115,662	49	0.0	102,887
Interest	11,166	12,201	12,557	13,081	13,134	13,316	182	1.4	11,991
Cash labor expenses	14,872	15,725	16,797	18,043	18,723	19,692	969	5.2	15,468
Property taxes	5,598	5,762	5,853	6,000	6,275	6,394	119	1.9	5,663
Net rent to nonoperator landlords 5/	12,923	12,347	14,424	14,382	14,080	13,853	-227	-1.6	12,825
NET CASH INCOME	51,134	52,605	57,514	58,474	54,953	53,343	-1,610	-2.9	54,711

F= forecast. 1/ Value added to gross income. Value added to net farm income equals difference in net farm income and returns to operators. 2/ Includes landlord capital consumption. 3/ Statistics in and above the Net Farm Income line represent the farm sector, defined as including farm operators' dwellings located on farms. Statistics below the Net Farm Income line represent only the farm businesses to the exclusion of the operators' dwellings.

4/ Returns to operators is equivalent to net farm income excluding the income and expenses associated with farm operators' dwellings.

5/ Excludes landlord capital consumption.

Appendix table 2--Deriving farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology, 1994-99 1/

	1994	1995	1996	1997	1998P	1999F
	Dollars per farm					
Net cash farm business income 2/	11,389	11,218	13,502	12,676	14,357	n.a.
Less depreciation 3/	6,466	6,795	6,906	6,578	7,409	n.a.
Less wages paid to operator 4/	425	522	531	513	637	n.a.
Less farmland rental income 5/	701	769	672	568	543	n.a.
Less adjusted farm business income due to other household(s) 6/	815	649	1,094	*1,505	1,332	n.a.
	Dollars per farm operator household					
Equals adjusted farm business income	2,981	2,484	4,300	3,513	4,436	n.a.
Plus wages paid to operator	425	522	531	513	637	n.a.
Plus net income from farmland rental 7/	n.a.	1,053	1,178	945	868	n.a.
Equals farm self-employment income	3,407	4,059	6,009	4,971	5,941	n.a.
Plus other farm-related earnings 8/	970	661	1,898	1,234	1,165	n.a.
Equals earnings of the operator household from farming activities	4,376	4,720	7,906	6,205	7,106	5,483
Plus earnings of the operator household from off-farm sources 9/	38,092	39,671	42,455	46,358	52,628	54,443
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	42,469	44,392	50,361	52,562	59,734	59,926
	Dollars per U.S. household					
U.S. average household income 10/	43,133	44,938	47,123	49,692	n.a.	n.a.
	Percent					
Average farm operator household income as percent of U.S. average household income	98.5	98.8	106.9	105.8	n.a.	n.a.
Average operator household earnings from farming activities as percent of average operator household income	10.3	10.6	15.7	11.8	11.9	n.a.

P = Preliminary. F = forecast. n.a. = not available. * = The relative standard error exceeds 25 percent, but is no more than 50 percent.

1/ This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income.

2/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations.

3/ Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash income. The ARMS collects farm business depreciation used for tax purposes.

4/ Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income.

5/ Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household.

6/ More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business.

7/ Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1994 net rental income was collected as part of off-farm income.

8/ Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. Beginning in 1996, also includes the value of commodities provided to household members for farm work.

9/ Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. In 1994, also includes net rental income from farmland.

10/ From the CPS.

Sources: U.S. Dept. of Agriculture, Economic Research Service, 1994 and 1995 Farm Costs and Returns Survey (FCRS), and 1996, 1997, and 1998 Agricultural Resource Management Study (ARMS) for farm operator household data. U.S. Dept. of Commerce, Bureau of the Census, Current Population Survey (CPS), for U.S. average household income.

For information on household income contact: Bob Hoppe (202) 694-5572. Email rhoppe@econ.ag.gov.

Appendix table 3--Farm marketings, 1997 and 1998, government payments, 1998, and principal commodities, 1998, by state

State	Farm marketings, 1997			Farm marketings, 1998			Government payments	State rank for total farm marketings, order of marketing receipts, and percentage of total marketings
	Total	Crops	Livestock and products	Total	Crops	Livestock and products		
AK	48,649	20,567	28,082	47,037	19,860	27,177	1,404	50-Greenhouse, dairy, cattle/calves, hay(45%)
AL	3,215,886	788,234	2,427,652	3,283,129	696,391	2,586,738	96,932	25-Broilers, cattle/calves, chicken eggs, greenhouse(79%)
AR	5,724,080	2,378,528	3,345,552	5,421,870	2,171,726	3,250,144	466,712	12-Broilers, rice, soybeans, cotton(73%)
AZ	2,182,632	1,276,358	906,274	2,368,073	1,425,152	942,921	78,987	29-Cattle/calves, lettuce, dairy, cotton(66%)
CA	26,137,127	19,827,468	6,309,659	24,616,242	17,771,171	6,845,071	352,710	1-Dairy, greenhouse, grapes, cattle/calves(42%)
CO	4,177,309	1,302,607	2,874,702	4,309,508	1,452,853	2,856,655	257,887	17-Cattle/calves, corn, wheat, dairy(70%)
CT	501,087	278,255	222,832	508,594	280,854	227,740	2,433	43-Greenhouse, dairy, chicken eggs, tobacco(56%)
DE	754,239	175,665	578,574	773,791	164,339	609,452	10,770	40-Broilers, soybeans, greenhouse, dairy(84%)
FL	6,515,687	5,116,136	1,399,551	6,761,965	5,354,616	1,407,349	24,918	9-Oranges, greenhouse, tomatoes, sugar(53%)
GA	5,751,843	2,350,339	3,401,504	5,454,249	2,046,648	3,407,601	178,283	11-Broilers, cotton, peanuts, chicken eggs(69%)
HI	509,999	423,531	86,468	509,951	417,970	91,981	231	42-Pineapples, sugar, greenhouse, macadamia nuts(56%)
IA	12,944,066	7,330,984	5,613,082	10,994,252	6,216,645	4,777,607	1,146,046	3-Corn, soybeans, hogs, cattle/calves(89%)
ID	3,282,886	1,877,771	1,405,115	3,320,352	1,735,389	1,584,963	196,340	24-Dairy, cattle/calves, potatoes, wheat(70%)
IL	8,983,540	7,055,140	1,928,400	7,742,280	6,167,021	1,575,259	934,043	6-Corn, soybeans, hogs, cattle/calves(87%)
IN	5,766,274	3,838,004	1,928,270	4,884,568	3,245,248	1,639,320	463,999	15-Corn, soybeans, hogs, dairy(75%)
KS	8,544,243	3,608,004	4,935,638	7,784,013	3,246,911	4,537,102	872,524	5-Cattle/calves, wheat, corn, soybeans(84%)
KY	3,542,989	1,570,666	1,972,323	3,920,208	1,786,527	2,133,681	140,107	19-Tobacco, horses/mules, cattle/calves, broilers(71%)
LA	2,168,288	1,509,638	658,650	1,890,624	1,245,131	645,493	257,694	33-Sugar, rice, cotton, cattle/calves(53%)
MA	531,136	416,751	114,385	507,340	394,873	112,467	1,717	44-Greenhouse, cranberries, dairy, sweet corn(70%)
MD	1,534,792	606,557	928,235	1,520,218	571,292	948,926	38,037	35-Broilers, greenhouse, dairy, soybeans(71%)
ME	489,376	212,929	276,447	505,645	223,586	282,059	6,483	45-Potatoes, dairy, chicken eggs, aquaculture(68%)
MI	3,598,421	2,233,563	1,364,858	3,480,343	2,157,557	1,322,786	208,077	22-Dairy, greenhouse, soybean, corn(58%)
MN	7,997,792	4,005,787	3,992,005	7,679,914	3,925,101	3,754,813	762,449	7-Soybeans, dairy, corn, hogs(66%)
MO	5,402,142	2,630,941	2,771,201	4,681,843	2,261,666	2,420,177	424,018	16-Soybeans, cattle/calves, corn, hogs(60%)
MS	3,480,101	1,476,152	2,003,949	3,454,358	1,285,208	2,169,150	281,899	23-Broilers, cotton, soybeans, aquaculture(75%)
MT	2,023,078	1,058,422	964,656	1,799,189	934,272	864,917	357,904	34-Cattle/calves, wheat, barley, hay(85%)
NC	8,230,000	3,507,052	4,722,948	7,163,967	3,246,807	3,917,160	129,375	8-Broilers, hogs, tobacco, greenhouse(66%)
ND	3,266,617	2,668,375	598,242	3,003,856	2,454,587	549,269	601,846	28-Wheat, cattle/calves, sunflower, soybeans(59%)
NE	9,803,248	4,294,957	5,508,291	8,848,014	3,724,514	5,123,500	797,382	4-Cattle/calves, corn, soybeans, hogs(89%)
NH	152,531	84,145	68,386	151,147	82,167	68,980	1,859	48-Dairy, greenhouse, apples, cattle/calves(71%)
NJ	794,263	626,490	167,773	828,318	650,058	178,260	5,492	39-Greenhouse, horses/mules, dairy, cranberries(52%)
NM	1,917,452	551,394	1,366,058	1,950,222	513,221	1,437,001	60,441	32-Cattle/calves, dairy, hay, greenhouse(81%)
NV	322,135	135,537	186,598	336,613	142,748	193,865	2,673	47-Cattle/calves, hay, dairy, greenhouse(80%)
NY	2,835,548	1,007,457	1,828,091	3,145,799	1,054,005	2,091,794	59,675	26-Dairy, greenhouse, apples, cattle/calves(73%)
OH	5,236,721	3,361,488	1,875,233	4,972,519	3,124,412	1,848,107	313,123	14-Soybeans, corn, dairy, greenhouse(65%)
OK	4,173,876	1,138,165	3,035,711	3,900,273	1,062,193	2,838,080	302,236	20-Cattle/calves, wheat, broilers, hogs(77%)
OR	3,229,394	2,426,683	802,711	3,091,992	2,329,995	761,997	99,952	27-Greenhouse, cattle/calves, hay, dairy(47%)
PA	4,131,936	1,324,359	2,807,577	4,174,592	1,260,720	2,913,872	45,356	18-Dairy, greenhouse, cattle/calves, chicken eggs(65%)
RI	63,104	54,427	8,677	64,866	55,770	9,096	167	49-Greenhouse, dairy, sweet corn, potatoes(80%)
SC	1,687,151	885,252	801,899	1,511,115	747,911	763,204	62,366	36-Broilers, greenhouse, tobacco, turkeys(55%)
SD	4,181,983	2,400,746	1,781,237	3,508,037	1,951,260	1,556,777	429,613	21-Cattle/calves, soybeans, corn, wheat(73%)
TN	2,272,883	1,245,246	1,027,637	2,215,587	1,177,114	1,038,473	127,962	31-Cattle/calves, broilers, dairy, tobacco(51%)
TX	13,207,725	5,060,311	8,147,414	13,206,203	4,986,047	8,220,156	998,457	2-Cattle/calves, cotton, greenhouse, dairy(71%)
UT	961,633	255,995	705,638	980,866	244,728	736,138	24,981	37-Cattle/calves, dairy, hay, hogs(69%)
VA	2,406,046	864,475	1,541,571	2,328,428	767,810	1,560,618	45,603	30-Broilers, dairy, cattle/calves, turkeys(55%)
VT	499,632	85,468	414,164	556,765	84,425	472,340	4,475	41-Dairy, cattle/calves, greenhouse, hay(90%)
WA	5,369,627	3,747,271	1,622,356	5,154,635	3,424,474	1,730,161	257,165	13-Dairy, apples, cattle/calves, wheat(52%)
WI	5,786,898	1,721,245	4,065,653	6,193,000	1,700,577	4,492,423	252,787	10-Dairy, corn, cattle/calves, soybeans(79%)
WV	396,840	69,302	327,538	404,745	69,180	335,565	5,280	46-Broilers, cattle/calves, dairy, turkeys(72%)
WY	876,291	190,507	685,784	850,295	169,656	680,639	28,690	38-Cattle/calves, hay, sugar beets, sheep/lambs(85%)
US	207,611,196	111,075,945	96,535,251	196,761,410	102,222,386	94,539,024	12,219,559	Cattle/calves, dairy prod, corn, soybeans(46%)

Appendix table 4--State rankings for net farm income: Total, per farming operation and per acre, 1998

R A N K	Total		Per operation		Per acre	
	State	Value (\$1000)	State	Value (Dollars)	State	Value (Dollars)
1	California	5,366,042	Arizona	88,633	Rhode Island	373
2	Texas	3,125,087	California	60,293	Connecticut	340
3	North Carolina	2,361,078	Florida	49,463	North Carolina	251
4	Iowa	2,277,273	Delaware	43,724	Massachusetts	229
5	Florida	2,225,846	North Carolina	40,708	Florida	210
6	Georgia	1,900,804	Georgia	38,016	Delaware	204
7	Nebraska	1,758,910	Alaska	36,299	California	188
8	Arkansas	1,594,954	New Mexico	35,699	Georgia	168
9	Kansas	1,496,048	South Dakota	35,640	Maryland	147
10	Illinois	1,483,681	Idaho	34,291	New Jersey	141
11	Kentucky	1,313,038	Rhode Island	32,290	Alabama	127
12	Ohio	1,298,533	Arkansas	32,221	Arkansas	108
13	Minnesota	1,260,353	Nebraska	31,980	Vermont	106
14	Alabama	1,209,086	Connecticut	31,519	Kentucky	94
15	South Dakota	1,158,285	Washington	26,262	Ohio	87
16	Washington	1,050,467	Colorado	25,753	Pennsylvania	86
17	Mississippi	926,689	Maryland	24,761	Mississippi	80
18	Wisconsin	908,453	Alabama	24,675	Idaho	70
19	Oklahoma	900,541	North Dakota	24,049	Iowa	69
20	Idaho	840,138	Iowa	23,477	South Carolina	67
21	Indiana	801,602	Kansas	23,016	Washington	67
22	Missouri	763,110	Mississippi	22,064	New York	57
23	Colorado	759,723	Massachusetts	21,714	Virginia	56
24	North Dakota	745,510	Vermont	21,187	Wisconsin	55
25	Arizona	700,203	Illinois	18,781	Illinois	53
26	Pennsylvania	662,070	Ohio	16,232	Indiana	51
27	New Mexico	571,187	Minnesota	15,754	Maine	49
28	Oregon	515,110	Nevada	15,716	Louisiana	46
29	Virginia	496,162	Kentucky	14,589	Minnesota	44
30	New York	447,430	Utah	14,584	Nebraska	38
31	Louisiana	373,780	Texas	13,828	Kansas	31
32	Montana	355,137	South Carolina	13,218	Oregon	30
33	Tennessee	343,267	Oregon	13,041	Michigan	30
34	South Carolina	330,461	Montana	12,914	Tennessee	29
35	Maryland	309,508	Louisiana	12,459	New Hampshire	28
36	Michigan	308,371	New Jersey	12,226	Oklahoma	26
37	Utah	218,757	Indiana	12,145	South Dakota	26
38	Vermont	141,950	New York	11,774	Missouri	25
39	Massachusetts	130,282	Wisconsin	11,647	Arizona	25
40	Connecticut	129,229	Pennsylvania	11,035	Texas	24
41	Delaware	118,055	Oklahoma	10,850	Hawaii	24
42	New Jersey	117,366	Virginia	10,126	Colorado	24
43	Maine	62,700	Maine	9,087	Alaska	22
44	Wyoming	59,774	Missouri	6,937	North Dakota	19
45	Nevada	47,148	Wyoming	6,497	Utah	19
46	West Virginia	34,884	Hawaii	6,210	New Mexico	13
47	Hawaii	34,157	Michigan	5,930	West Virginia	9
48	Rhode Island	24,218	New Hampshire	3,832	Nevada	7
49	Alaska	20,328	Tennessee	3,772	Montana	6
50	New Hampshire	11,881	West Virginia	1,661	Wyoming	2
	United States	44,088,272	United States	20,118	United States	46

Appendix table 5--Farm business balance sheet, 1993-99F

Item	1993	1994	1995	1996	1997	1998	1999F
				\$ billion			
Farm assets	910.2	935.5	966.7	1,003.9	1,051.6	1,064.3	1,072.7
Real estate	677.6	704.1	740.5	769.5	808.4	822.8	831.0
Livestock and poultry	72.8	67.9	57.8	60.3	67.1	62.0	62.0
Machinery and equipment	86.5	87.5	88.5	88.9	89.0	88.6	87.6
Crops stored	23.3	23.3	27.4	31.7	32.2	30.1	30.1
Purchased inputs	3.8	5.0	3.4	4.4	5.1	5.3	5.5
Financial assets	46.3	47.6	49.1	49.1	49.7	55.4	56.5
Farm debt	142.0	146.8	150.8	156.1	165.4	172.9	172.7
Real estate	76.0	77.7	79.3	81.7	85.4	89.6	89.6
Nonreal estate	65.9	69.1	71.5	74.4	80.1	83.2	83.1
Farm equity	768.3	788.7	815.9	847.8	886.2	891.4	900.0
				Percent			
Ratios:							
Debt to equity	18.5	18.6	18.5	18.4	18.7	19.4	19.2
Debt to assets	15.6	15.7	15.6	15.5	15.7	16.2	16.1

F = forecast.

Appendix table 6--Farm sector rates of return, 1993-99F

Item	1993	1994	1995	1996	1997	1998	1999F
				Percent			
Rate of return on assets	3.0	3.6	2.1	3.9	2.8	2.3	3.4
Real capital gains on assets	2.6	1.0	2.0	1.9	2.9	0.7	-1.2
Total real return on assets	5.6	4.6	4.1	5.8	5.6	3.0	2.2
Average interest rate paid on debt	7.3	7.7	8.2	8.2	8.1	8.1	7.8
Real capital gains on debt	2.6	2.3	2.2	2.0	1.8	0.8	1.8
Real cost of debt	4.8	5.4	6.0	6.2	6.3	7.3	6.0
Rate of return on equity	2.2	2.8	0.9	3.2	1.9	1.2	2.5
Real capital gains on equity	3.6	1.7	2.8	2.6	3.6	1.1	2.9
Total real return on equity	5.7	4.5	3.7	5.8	5.4	2.2	5.4
Real net return on assets financed by debt 1/	0.8	-0.8	-1.9	-0.4	-0.8	-4.4	-3.8

F=forecast

1/ Total real rate of return on farm assets minus the real cost of debt.

Appendix table 7--Farm financial measures, 1993-99F

Item	1993	1994	1995	1996	1997	1998	1999F
				Ratio			
Liquidity ratios:							
Farm business debt service coverage	2.43	2.58	2.19	2.16	2.26	2.20	2.02
Debt servicing	0.13	0.14	0.15	0.14	0.14	0.15	0.15
Times interest earned ratio	5.76	5.82	4.48	5.75	5.10	4.61	4.62
				Percent			
Solvency ratios:							
Debt/asset	15.6	15.7	15.6	15.6	15.7	16.2	16.1
Debt/equity	18.5	18.6	18.5	18.4	18.7	19.4	19.2
Profitability ratios:							
Return on equity	2.2	2.8	0.9	3.2	1.9	1.2	2.5
Return on assets	3.0	3.6	2.1	3.9	2.8	2.3	3.4
Financial efficiency ratios:							
Gross ratio	70.3	74.2	74.4	73.6	74.3	75.3	75.7
Interest to gross cash farm income	5.2	5.6	5.9	5.8	5.8	6.2	6.1
Asset turnover	22.5	21.5	21.6	22.1	22.1	21.1	21.4
Debt burden ratio [net cash income plus interest]/farm debt]	49.6	43.2	43.6	45.7	44.5	40.6	39.2

F = forecast.

Appendix table 8--Corn production costs and returns, excluding direct Government payments, 1997-98

Item	United States		Heartland		Northern Crescent		Northern Great Plains		Prairie Gateway		Eastern Uplands		Southern Seaboard	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre														
Gross value of production														
(excluding direct Government payments):														
Primary product: Corn grain	327.60	259.76	340.00	275.04	298.69	236.25	228.48	195.36	354.66	271.05	277.44	241.68	271.60	145.28
Secondary product: Corn silage	3.77	3.12	1.73	1.33	16.67	15.21	3.60	2.10	0.20	0.20	0.00	0.00	4.35	2.12
Total, gross value of production	331.37	262.88	341.73	276.37	315.36	251.46	232.08	197.46	354.86	271.25	277.44	241.68	275.95	147.40
Operating costs:														
Seed	28.71	30.02	29.39	31.07	27.63	28.00	27.59	27.60	28.81	29.83	22.07	22.93	23.02	22.93
Fertilizer, lime, and gypsum	46.21	41.44	49.27	44.36	39.58	35.79	26.49	22.37	42.10	36.68	57.40	51.85	58.87	54.99
Soil conditioners	0.16	0.16	0.10	0.10	0.44	0.47	0.00	0.00	0.01	0.01	1.62	1.66	0.65	0.69
Manure	0.56	0.51	0.41	0.39	1.96	1.82	0.00	0.00	0.01	0.00	0.51	0.48	0.05	0.04
Chemicals	26.87	27.36	27.97	28.69	26.04	26.01	19.00	19.41	25.78	25.87	30.31	31.63	20.77	20.64
Custom operations 2/	11.30	11.29	10.58	10.70	9.88	9.76	21.34	21.49	14.27	13.82	6.37	6.43	12.52	11.54
Fuel, lube, and electricity	24.55	22.96	22.16	20.76	21.90	20.08	20.95	19.75	42.84	40.61	17.56	16.27	19.33	13.76
Repairs	16.17	16.65	14.64	15.14	15.56	16.56	17.55	18.24	24.41	24.42	14.51	15.44	17.42	15.55
Other variable cash expenses 3/	0.32	0.31	0.00	0.00	0.00	0.00	0.25	0.24	2.45	2.26	0.00	0.00	0.00	0.00
Interest on operating capital	3.96	3.61	3.95	3.62	3.66	3.32	3.41	3.09	4.62	4.16	3.85	3.52	3.90	3.36
Total, operating costs	158.81	154.31	158.47	154.83	146.65	141.81	136.58	132.19	185.30	177.66	154.20	150.21	156.53	143.50
Allocated overhead:														
Hired labor	3.07	3.19	2.17	2.27	4.09	4.24	1.78	1.78	5.88	6.01	2.59	2.75	9.95	10.81
Opportunity cost of unpaid labor	29.89	30.63	29.29	30.14	35.87	36.81	22.77	23.10	23.64	24.21	55.19	57.54	50.24	52.28
Capital recovery of machinery and equipment	64.50	66.46	61.52	63.67	65.13	69.23	56.52	59.30	80.44	80.53	66.13	70.40	76.09	68.33
Opportunity cost of land (rental rate)	84.81	86.35	95.40	97.17	62.22	64.86	53.57	55.33	80.47	80.17	47.73	43.55	34.39	33.23
Taxes and insurance	7.00	7.05	6.32	6.38	6.47	6.47	9.77	9.78	10.05	10.02	6.71	6.79	8.87	9.21
General farm overhead	12.21	11.47	12.22	11.49	15.13	14.31	7.15	6.75	10.99	10.30	11.95	11.29	10.30	9.74
Total, allocated overhead	201.48	205.15	206.92	211.12	188.91	195.92	151.56	156.04	211.47	211.24	190.30	192.32	189.84	183.60
Total costs listed	360.29	359.46	365.39	365.95	335.56	337.73	288.14	288.23	396.77	388.90	344.50	342.53	346.37	327.10
Value of production less total costs listed	-28.92	-96.58	-23.66	-89.58	-20.20	-86.27	-56.06	-90.77	-41.91	-117.65	-67.06	-100.85	-70.42	-179.70
Value of production less operating costs	172.56	108.57	183.26	121.54	168.71	109.65	95.50	65.27	169.56	93.59	123.24	91.47	119.42	3.90
Supporting information:														
Yield (bushels per planted acre)	130	136	136	144	119	125	96	111	138	139	102	114	97	64
Price (dollars per bushel at harvest)	2.52	1.91	2.50	1.91	2.51	1.89	2.38	1.76	2.57	1.95	2.72	2.12	2.80	2.27
Enterprise size (planted acres) 1/	189	189	223	223	113	113	301	301	344	344	42	42	96	96
Production practices: 1/														
Irrigated (percent)	15	15	6	9	2	2	39	39	77	77	0	0	0	0
Dryland (percent)	85	85	94	94	98	98	61	61	23	23	100	100	100	100

1/ For 1996 survey base year only. 2/ Cost of custom operations, technical services and commercial drying. 3/ Cost of purchased irrigation water.

Appendix table 9--Soybean production costs and returns, 1997-98

Item	United States		Heartland		Northern Crescent		Northern Great Plains	
	1997	1998	1997	1998	1997	1998	1997	1998
Gross value of production								
Primary product: Soybeans	281.22	223.17	292.05	237.36	280.36	224.84	235.22	204.12
Total, gross value of production	281.22	223.17	292.05	237.36	280.36	224.84	235.22	204.12
Operating costs:								
Seed	19.72	20.46	19.59	19.77	22.81	24.21	17.60	16.13
Fertilizer	8.00	8.00	7.20	7.23	13.31	13.33	5.55	5.05
Soil conditioners	0.10	0.10	0.09	0.08	0.17	0.19	0.00	0.00
Manure	0.86	0.80	1.00	0.91	2.00	1.88	0.47	0.41
Chemicals	26.37	26.65	26.85	27.31	25.70	25.78	20.42	20.24
Custom operations	5.85	5.84	5.94	5.93	5.89	6.01	6.33	6.35
Fuel, lube, and electricity	7.14	5.97	6.42	5.35	7.15	6.28	8.26	7.15
Repairs	9.40	9.59	8.64	8.91	9.01	9.39	9.48	9.93
Purchased irrigation water	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Interest on operating capital	1.98	1.86	1.94	1.81	2.20	2.09	1.74	1.56
Total, operating costs	79.47	79.32	77.67	77.30	88.24	89.16	69.85	66.82
Allocated overhead:								
Hired labor	1.94	1.98	1.25	1.29	1.78	1.90	2.52	2.58
Opportunity cost of unpaid labor	17.63	18.11	17.31	17.73	23.90	24.44	14.27	14.62
Capital recovery of machinery and equipment	49.61	50.66	46.56	47.99	49.62	51.63	44.29	46.38
Opportunity cost of land (rental rate)	76.74	77.66	86.67	87.96	62.50	65.46	36.76	38.18
Taxes and insurance	6.76	6.89	6.84	6.97	6.92	6.99	8.64	8.77
General farm overhead	13.68	12.94	14.22	13.40	13.98	13.27	21.22	20.04
Total, allocated overhead	166.36	168.24	172.85	175.34	158.70	163.69	127.70	130.57
Total costs listed	245.83	247.56	250.52	252.64	246.94	252.85	197.55	197.39
Value of production less total costs listed	35.39	-24.39	41.53	-15.28	33.42	-28.01	37.67	6.73
Value of production less operating costs	201.75	143.85	214.38	160.06	192.12	135.68	165.37	137.30
Supporting information:								
Yield (bushels per planted acre)	43	43	45	46	43	44	38	42
Price (dollars per bushel at harvest)	6.54	5.19	6.49	5.16	6.52	5.11	6.19	4.86
Enterprise size (planted acres) 1/	220	220	225	225	115	115	281	281
Production practices: 1/								
Irrigated (percent)	5	5	2	2	3	3	7	7
Dryland (percent)	95	95	98	98	97	97	93	93

See footnotes at end of table.

Continued--

Appendix table 9--Soybean production costs and returns, 1997-98-Continued

Item	Prairie Gateway		Eastern Uplands		Southern Seaboard		Mississippi Portal	
	1997	1998	1997	1998	1997	1998	1997	1998
	Dollars per planted acre							
Gross value of production								
Primary product: Soybeans								
Total, gross value of production	262.81	188.33	248.76	175.36	212.66	217.20	216.38	143.50
Total, gross value of production	262.81	188.33	248.76	175.36	212.66	217.20	216.38	143.50
Operating costs:								
Seed	20.82	22.86	20.83	21.32	17.96	21.24	18.72	21.57
Fertilizer	4.61	4.30	20.01	19.88	22.96	22.59	7.58	7.81
Soil conditioners	0.03	0.03	0.43	0.45	0.67	0.75	0.05	0.06
Manure	0.06	0.05	0.16	0.15	0.25	0.23	0.07	0.06
Chemicals	24.41	24.31	24.75	25.64	25.43	24.71	26.13	25.81
Custom operations	6.48	6.48	3.66	3.63	5.99	5.68	5.03	4.98
Fuel, lube, and electricity	9.77	8.35	5.73	4.25	6.61	6.37	10.08	8.27
Repairs	11.74	11.76	7.75	7.88	8.98	9.67	13.15	12.92
Purchased irrigation water	0.80	0.77	0.00	0.00	0.00	0.00	0.00	0.00
Interest on operating capital	2.01	1.89	2.13	1.99	2.27	2.19	2.07	1.95
Total, operating costs	80.73	80.80	85.45	85.19	91.12	93.43	82.88	83.43
Allocated overhead:								
Hired labor	2.31	2.42	1.97	2.08	3.58	3.85	5.44	5.62
Opportunity cost of unpaid labor	19.08	19.50	29.99	30.91	19.96	20.92	14.19	14.58
Capital recovery of machinery and equipment	56.59	56.65	47.08	47.90	51.05	55.34	64.56	63.55
Opportunity cost of land (rental rate)	46.36	49.89	40.37	29.71	34.07	33.84	58.61	55.49
Taxes and insurance	8.03	8.25	5.65	5.75	4.95	5.00	5.74	5.82
General farm overhead	13.30	12.54	10.60	10.00	12.00	11.44	10.05	9.50
Total, allocated overhead	145.67	149.25	135.66	126.35	125.61	130.39	158.59	154.56
Total costs listed	226.40	230.05	221.11	211.54	216.73	223.82	241.47	237.99
Value of production less total costs listed	36.41	-41.72	27.65	-36.18	-4.07	-6.62	-25.09	-94.49
Value of production less operating costs	182.08	107.53	163.31	90.17	121.54	123.77	133.50	60.07
Supporting information:								
Yield (bushels per planted acre)	41	37	36	32	31	40	31	25
Price (dollars per bushel at harvest)	6.41	5.09	6.91	5.48	6.86	5.43	6.98	5.74
Enterprise size (planted acres) ^{1/}	170	170	130	130	234	234	495	495
Production practices: ^{1/}								
Irrigated (percent)	20	20	0	0	0	0	19	19
Dryland (percent)	80	80	100	100	100	100	81	81

^{1/} For 1997 survey base year only.

Appendix table 10--Cotton production costs and returns, 1997-98

Item	United States		Heartland		Prairie Gateway		Southern Seaboard		Fruitful Rim		Mississippi Portal	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre												
Gross value of production:												
Primary product: Cotton	477.48	321.92	532.00	354.42	291.84	169.92	504.70	458.95	773.07	365.82	542.03	464.75
Secondary product: Cottonseed	68.07	53.71	68.24	50.15	42.07	34.30	64.20	60.32	133.20	85.25	70.87	64.97
Total, gross value of production	545.55	375.63	600.24	404.57	333.91	204.22	568.90	519.27	906.27	451.07	612.90	529.72
Operating costs:												
Seed	17.63	18.78	9.66	10.58	14.47	13.62	17.62	18.78	23.31	30.25	19.16	21.11
Fertilizer	35.31	33.72	34.40	33.99	19.72	17.54	51.04	48.22	47.32	50.58	39.61	39.85
Chemicals	60.19	62.60	74.32	80.00	25.89	25.09	69.34	71.37	96.95	112.87	83.73	91.75
Custom operations	23.27	13.85	9.41	6.76	9.78	6.29	16.36	15.70	76.87	32.81	16.79	15.14
Fuel, lube, and electricity	31.59	27.82	19.76	17.63	28.48	24.34	25.04	21.49	61.40	59.53	23.76	21.23
Repairs	24.38	27.10	32.30	36.91	20.79	22.05	22.86	25.26	25.13	30.85	30.52	34.96
Interest on operating inputs	6.54	5.71	6.12	5.53	4.09	3.33	6.62	6.33	11.95	10.25	6.97	6.73
Ginning	62.75	45.57	63.88	45.10	47.39	29.93	66.70	63.50	94.08	49.51	64.49	56.93
Purchased irrigation water	8.71	8.68	0.00	0.00	0.00	0.00	0.00	0.00	54.84	61.20	0.00	0.00
Total, operating costs	270.37	243.83	249.85	236.50	170.61	142.19	275.58	270.65	491.85	437.85	285.03	287.70
Allocated overhead:												
Hired labor	33.72	36.37	22.01	24.44	25.12	25.54	26.11	26.86	61.48	74.63	36.86	42.05
Opportunity cost of unpaid labor	28.03	29.57	17.45	19.16	29.46	28.60	34.04	35.86	29.51	35.05	21.23	23.82
Capital recovery of machinery and equipment	88.89	89.37	120.74	125.33	70.76	67.25	86.57	86.95	98.46	109.32	111.67	116.78
Opportunity cost of land*	58.33	50.89	104.90	67.13	46.75	21.01	37.48	41.77	117.37	147.87	48.70	49.94
Taxes and insurance	14.97	14.75	6.88	7.04	14.20	12.98	17.48	17.07	16.63	18.40	14.10	14.63
General farm overhead	15.55	15.13	6.27	6.32	10.58	9.59	12.37	11.91	33.61	36.61	15.33	15.72
Total, allocated overhead	239.49	236.08	278.25	249.42	196.87	164.97	214.05	220.42	357.06	421.88	247.89	262.94
Total costs listed	509.86	479.91	528.10	485.92	367.48	307.16	489.63	491.07	848.91	859.73	532.92	550.64
Value of production less total costs listed	35.69	-104.28	72.14	-81.35	-33.57	-102.94	79.27	28.20	57.36	-408.66	79.98	-20.92
Value of production less operating costs	275.18	131.80	350.39	168.07	163.30	62.03	293.32	248.62	414.42	13.22	327.87	242.02
Explanatory information to accounts:												
Cotton Yield: pounds per planted acre	692	503	760	537	456	288	721	685	1,059	546	809	715
Price: dollars per pound	0.69	0.64	0.70	0.66	0.64	0.59	0.70	0.67	0.73	0.67	0.67	0.65
Cottonseed Yield: pounds per planted acre	1,119	860	1,230	836	738	504	1,167	1,075	1,714	1,259	1,309	1,088
Price: dollars per pound	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.08	0.07	0.05	0.06
Percent												
Production practices 1/												
Percent irrigated	33		33		30		11		74		30	
Percent dryland	67		67		70		89		26		70	
Farm capital structure 1/												
Acres owned	35		21		30		37		54		31	
Acres cash rented	23		16		4		56		25		26	
Acres share rented	42		63		66		7		21		43	
* Land rent basis			Share		Share		Cash		Cash		Cash	

1/ For 1997 survey base year only.

Appendix table 11--Peanut production costs and returns, 1997-98

					Southern Seaboard			
Item	United States		Prairie Gateway		AL, GA	AL, GA	VA, NC	VA,NC
	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre								
Gross value of production:								
Primary product: Peanuts	659.62	669.24	478.32	376.05	678.08	760.86	873.99	931.32
Secondary product: Peanut hay	13.30	12.58	18.51	16.45	11.45	11.12	11.20	10.93
Total, gross value of production	672.92	681.82	496.83	392.50	689.53	771.98	885.19	942.25
Operating costs:								
Seed	81.30	78.76	59.35	52.57	85.61	85.81	107.52	108.27
Fertilizer	44.25	42.32	21.49	17.79	54.47	54.14	53.26	53.36
Chemicals	110.59	106.34	39.09	35.30	131.12	129.50	173.46	171.97
Custom operations	10.42	10.14	11.96	9.52	10.50	11.13	6.41	7.10
Fuel, lube, and electricity	42.31	34.63	53.65	42.60	34.39	27.90	41.61	35.70
Repairs	29.74	31.09	27.97	27.37	30.84	32.99	29.53	32.45
Interest on operating inputs	8.61	7.69	6.01	4.85	9.37	8.68	10.67	9.95
Commercial drying	17.97	17.71	21.51	17.32	19.37	20.86	5.60	6.44
Total, operating costs	345.19	328.68	241.03	207.32	375.67	371.01	428.06	425.24
Allocated overhead:								
Hired labor	38.81	37.13	25.55	24.03	39.58	37.18	53.60	56.56
Opportunity cost of unpaid labor	86.69	84.01	94.75	85.27	81.58	81.52	89.97	90.78
Capital recovery of machinery and equipment	130.94	121.40	124.77	108.06	132.96	126.63	135.79	131.00
Opportunity cost of land*	44.81	41.31	69.68	54.63	33.52	34.77	49.60	47.11
Quota rent	99.28	91.17	70.74	53.28	111.57	108.39	96.14	93.75
Taxes and insurance	23.83	21.68	17.07	14.51	26.31	24.64	25.54	23.99
General farm overhead	18.69	16.67	22.48	18.84	15.01	13.76	21.23	19.53
Total, allocated overhead	443.05	413.37	425.04	358.62	440.53	426.89	471.87	462.72
Total costs listed	788.24	742.05	666.07	565.94	816.20	797.90	899.93	887.96
Value of production less total costs listed	-115.32	-60.23	-169.24	-173.44	-126.67	-25.92	-14.74	54.29
Value of production less operating costs	327.73	353.14	255.80	185.18	313.86	400.97	457.13	517.01
Explanatory information to account:								
Peanut yield: lbs/acre	2,537	2,574	1,993	1,635	2,608	2,818	3,237	3,582
Peanut price: dollars/lb	0.26	0.26	0.24	0.23	0.26	0.27	0.27	0.26
Percent								
Production practices 1/								
Percent irrigated	32		64		25		6	
Percent dryland	68		36		75		94	
Farm capital structure 1/								
Acres owned	35		35		37		23	
Acres cash rented	55		38		61		63	
Acres share rented	10		25		2		14	
* Land rent basis			Share		Cash		Cash	

Appendix table 12--Cow-calf production costs and returns per bred cow, 1997-98

Item	United States		Heartland		Northern Crescent		Northern Great Plains		Prairie Gateway	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars										
Gross value of production:										
Steer calves	130.39	129.55	151.85	150.19	na	na	132.77	132.69	141.90	140.49
Heifer calves	80.91	80.48	102.34	101.54	na	na	82.78	82.34	76.61	76.04
Yearling steers	92.70	87.67	33.80	31.64	na	na	111.54	102.98	129.12	122.07
Yearling heifers	39.36	37.35	10.45	9.82	na	na	32.88	30.06	66.12	63.28
Other cattle	70.91	67.93	64.18	60.95	na	na	84.55	82.51	72.99	68.35
Total gross value of production	414.27	402.98	362.62	354.14	na	na	444.52	430.58	486.74	470.23
Operating costs:										
Feeder cattle	38.45	36.49	67.77	63.52	na	na	15.29	13.89	31.02	29.38
Feed:										
Concentrates and other feed	29.17	26.95	30.95	26.36	na	na	22.53	20.26	37.58	35.66
Supplemental feed	19.19	15.06	41.40	33.03	na	na	42.98	32.35	6.74	5.49
Harvested forages	114.71	99.11	323.91	258.50	na	na	121.75	96.27	48.98	48.59
Cropland pasture	13.25	13.23	13.20	14.80	na	na	9.16	7.31	24.00	25.12
Private pasture	114.17	99.09	68.10	69.94	na	na	124.50	111.10	97.68	85.52
Public land	2.52	1.99	0.34	0.35	na	na	5.80	4.58	1.57	1.17
Total feed costs	293.01	255.43	477.90	402.98	na	na	326.72	271.87	216.55	201.55
Other:										
Veterinary and medicine	21.64	22.04	37.36	39.30	na	na	14.73	15.38	18.72	18.94
Bedding and litter	0.37	0.37	1.17	1.20	na	na	0.21	0.22	0.03	0.03
Marketing	5.80	5.86	4.10	4.29	na	na	6.37	6.63	6.58	6.52
Custom operations	30.48	31.02	39.03	41.01	na	na	29.33	31.08	23.39	23.47
Fuel, lube, and electricity	19.13	19.14	16.17	16.18	na	na	16.41	16.44	22.25	22.33
Repairs	24.87	25.34	28.27	29.66	na	na	21.62	22.69	30.31	30.43
Interest on operating inputs	10.98	10.28	16.97	15.83	na	na	10.75	10.05	9.14	8.57
Total operating costs	444.73	405.97	688.74	613.97	na	na	441.43	388.25	357.99	341.22
Allocated overhead:										
Hired labor	2.98	3.12	0.46	0.48	na	na	0.64	0.65	2.26	2.37
Opportunity cost of unpaid labor	223.82	229.58	183.33	188.27	na	na	302.94	309.71	173.84	177.90
Capital recovery cost of machinery and equipment	127.02	122.54	257.18	254.55	na	na	76.71	74.76	126.80	118.18
Opportunity cost of land	2.23	2.26	5.01	5.10	na	na	2.79	2.89	1.48	1.48
Taxes and insurance	31.13	32.92	41.37	43.53	na	na	31.27	33.33	28.42	30.03
General farm overhead	63.41	60.00	87.80	82.69	na	na	57.50	54.98	64.45	60.97
Total allocated overhead	450.59	450.42	575.15	574.62	na	na	471.85	476.32	397.25	390.93
Total cost listed	895.32	856.39	1263.89	1188.59	na	na	913.28	864.57	755.24	732.15
Value of production less total costs listed	-481.05	-453.41	-901.27	-834.45	na	na	-468.76	-433.99	-268.50	-261.92
Value of production less operating costs	-30.46	-2.99	-326.12	-259.83	na	na	3.09	42.33	128.75	129.01

See notes at end of table.

Continued--

Appendix table 12--Cow-calf production costs and returns per bred cow, 1997-98--Continued

Item	Eastern Uplands		Southern Seaboard		Fruitful Rim		Basin and Range		Mississippi Portal	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars										
Gross value of production:										
Steer calves	114.97	114.48	na	na	72.73	72.45	141.35	139.46	113.88	117.58
Heifer calves	91.58	91.74	na	na	50.19	49.90	87.11	86.45	97.57	100.75
Yearling steers	48.42	47.17	na	na	52.93	50.83	126.48	123.64	65.62	64.49
Yearling heifers	21.52	20.89	na	na	21.12	20.17	54.08	51.75	16.52	16.22
Other cattle	58.27	57.52	na	na	59.37	57.86	76.68	72.79	57.68	56.42
Total gross value of production	334.76	331.80	na	na	256.34	251.21	485.70	474.09	351.27	355.46
Operating costs:										
Feeder cattle	10.99	11.07	na	na	106.97	104.47	6.90	6.79	0.00	0.00
Feed:										
Concentrates and other feed	26.95	23.83	na	na	23.16	22.66	10.73	9.60	22.68	19.50
Supplemental feed	14.84	11.89	na	na	4.02	3.23	3.10	2.27	18.36	14.20
Harvested forages	80.46	85.14	na	na	80.04	70.08	129.46	118.51	58.95	55.79
Cropland pasture	4.02	4.09	na	na	3.78	3.72	8.49	5.52	3.50	3.93
Private pasture	69.10	66.99	na	na	194.62	169.57	188.16	123.56	53.23	59.89
Public land	0.40	0.37	na	na	1.89	1.93	5.53	3.71	0.00	0.00
Total feed costs	195.77	192.31	na	na	307.51	271.19	345.47	263.17	156.72	153.31
Other:										
Veterinary and medicine	15.18	15.46	na	na	35.29	35.08	16.57	16.07	19.01	20.41
Bedding and litter	0.53	0.52	na	na	0.43	0.41	0.67	0.66	0.01	0.01
Marketing	6.62	6.66	na	na	4.54	4.56	5.94	5.77	5.47	5.87
Custom operations	25.42	26.22	na	na	55.60	54.78	25.29	24.48	19.85	21.31
Fuel, lube, and electricity	15.66	15.66	na	na	22.28	22.28	18.84	18.81	27.07	27.07
Repairs	24.30	24.91	na	na	18.67	18.61	17.70	17.10	21.38	22.95
Interest on operating inputs	7.62	7.16	na	na	13.39	12.53	10.79	10.11	5.81	5.45
Total operating costs	302.09	299.97	na	na	564.68	523.91	448.17	362.96	255.32	256.38
Allocated overhead:										
Hired labor	2.74	2.84	na	na	14.24	15.28	1.25	1.32	0.36	0.39
Opportunity cost of unpaid labor	140.04	144.12	na	na	255.25	263.29	364.79	377.53	487.23	501.79
Capital recovery cost of machinery and equipment	167.02	166.29	na	na	75.19	71.62	67.52	63.73	144.41	150.36
Opportunity cost of land	2.26	2.10	na	na	0.95	0.94	1.48	1.47	2.28	1.35
Taxes and insurance	30.38	32.07	na	na	29.65	31.15	29.04	30.55	24.63	25.93
General farm overhead	56.89	53.23	na	na	57.14	53.86	58.05	54.75	57.35	54.09
Total allocated overhead	399.33	400.65	na	na	432.42	436.14	522.13	529.35	716.26	733.91
Total cost listed	701.42	700.62	na	na	997.10	960.05	970.30	892.31	971.58	990.29
Value of production less total costs listed	-366.66	-368.82	na	na	-740.76	-708.84	-484.60	-418.22	-620.31	-634.83
Value of production less operating costs	32.67	31.83	na	na	-308.34	-272.70	37.53	111.13	95.95	99.08

na = not available.

Appendix table 13--Wheat production costs and returns, excluding direct Government payments, 1997-98

Item	United States		North Central		Southeast		Northern Plains		Southern Plains		Pacific	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre												
Gross value of production (excluding direct Government payments):												
Wheat	125.29	104.73	195.24	129.90	177.18	120.35	93.61	88.89	114.58	102.79	245.52	152.90
Wheat straw	5.53	5.24	39.57	29.76	5.56	5.38	0.74	0.52	4.71	5.06	2.22	1.95
Total, gross value of production	130.82	109.97	234.81	159.66	182.74	125.73	94.35	89.41	119.29	107.85	247.74	154.85
Cash expenses:												
Seed	9.02	7.71	18.91	15.94	18.02	14.74	7.64	7.27	7.24	5.19	11.93	10.53
Fertilizer, lime, and gypsum	19.85	18.21	43.76	40.87	36.80	33.65	14.85	12.61	16.46	14.41	32.53	31.55
Chemicals	6.32	6.13	0.93	0.92	7.18	7.29	8.33	8.28	3.14	3.07	15.95	15.76
Custom operations	6.33	6.85	4.93	5.17	7.17	7.60	2.64	2.98	10.03	10.51	7.71	7.97
Fuel, lube, and electricity	10.20	9.07	6.50	5.28	6.44	5.25	6.74	5.94	12.25	10.90	21.94	19.29
Repairs	13.37	13.82	9.81	9.98	10.58	10.93	12.77	13.52	13.57	13.83	19.55	19.96
Hired labor	5.00	5.40	2.15	2.25	7.71	8.31	2.52	2.69	5.61	5.98	15.67	16.40
Other variable cash expenses 1/	0.40	0.40	0.81	0.78	0.36	0.34	0.03	0.03	0.07	0.07	3.36	3.19
Total, variable cash expenses	70.49	67.59	87.80	81.19	94.26	88.11	55.52	53.32	68.37	63.96	128.64	124.65
General farm overhead	6.78	5.35	10.23	7.89	4.95	3.89	5.35	4.20	6.59	5.10	12.16	9.46
Taxes and insurance	10.70	10.01	16.49	15.24	13.30	12.63	9.61	8.78	8.90	8.22	18.38	17.37
Interest	9.68	8.38	9.35	8.05	5.56	4.48	9.47	8.27	9.49	8.21	13.38	11.40
Total, fixed cash expenses	27.16	23.74	36.07	31.18	23.81	21.00	24.43	21.25	24.98	21.53	43.92	38.23
Total, cash expenses	97.65	91.33	123.87	112.37	118.07	109.11	79.95	74.57	93.35	85.49	172.56	162.88
Gross value of production less cash expenses	33.17	18.64	110.94	47.29	64.67	16.62	14.40	14.84	25.94	22.36	75.18	-8.03
Economic (full ownership) costs:												
Variable cash expenses	70.49	67.59	87.80	81.19	94.26	88.11	55.52	53.32	68.37	63.96	128.64	124.65
General farm overhead	6.78	5.35	10.23	7.89	4.95	3.89	5.35	4.20	6.59	5.10	12.16	9.46
Taxes and insurance	10.70	10.01	16.49	15.24	13.30	12.63	9.61	8.78	8.90	8.22	18.38	17.37
Capital replacement	24.98	25.81	21.79	22.18	20.60	21.30	24.73	26.18	23.39	23.85	38.04	38.63
Operating capital	1.83	1.64	2.27	1.97	2.44	2.14	1.44	1.29	1.77	1.55	3.33	3.02
Other nonland capital	12.40	11.45	12.07	11.08	11.20	10.31	13.57	12.91	11.15	10.14	13.32	12.08
Land	43.06	37.90	54.23	44.86	21.85	21.60	39.10	37.95	37.72	34.19	84.95	54.06
Unpaid labor	10.03	10.63	10.28	10.47	7.44	7.37	6.73	7.03	11.44	12.10	20.01	20.68
Total, economic costs	180.27	170.38	215.16	194.88	176.04	167.35	156.05	151.66	169.33	159.11	318.83	279.95
Residual returns to management and risk	-49.45	-60.41	19.65	-35.22	6.70	-41.62	-61.70	-62.25	-50.04	-51.26	-71.09	-125.10
Harvest-period price (dollars/bu.)	3.49	2.64	3.15	2.37	3.66	2.69	3.81	2.86	3.27	2.65	3.67	2.40
Yield (bu./planted acre)	35.90	39.67	61.98	54.81	48.41	44.74	24.57	31.08	35.04	38.79	66.90	63.71

1/ Cost of purchased irrigation water and baling.

Appendix table 14--Rice production costs and returns, excluding direct Government payments, 1997-98

Item	United States		Arkansas (non-Delta)		Mississippi River Delta		Gulf Coast 1/		California	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Gross value of production (excluding direct Government payments):										
Rice	591.36	525.75	596.92	548.09	575.17	524.95	546.11	491.67	704.93	665.64
Total, gross value of production	591.36	525.75	596.92	548.09	575.17	524.95	546.11	491.67	704.93	665.64
Cash expenses:										
Seed	24.15	25.15	22.47	25.04	23.40	24.55	25.53	25.73	26.20	25.28
Fertilizer	52.59	46.41	47.33	38.25	46.81	40.35	55.05	49.79	65.98	64.12
Chemicals	68.32	68.32	65.18	65.18	66.74	66.74	62.86	62.86	83.76	83.76
Custom operations 2/	45.80	45.32	34.53	34.65	34.45	34.86	40.15	40.29	88.62	85.05
Fuel, lube, and electricity	68.14	58.25	67.32	60.14	71.61	62.50	62.10	55.12	73.88	53.92
Repairs	28.83	29.10	28.37	29.27	25.90	26.66	26.80	27.51	36.25	34.09
Hired labor	38.01	37.60	34.27	33.91	33.45	33.09	39.80	39.38	48.00	47.49
Drying 3/	29.72	27.87	25.07	25.68	11.95	12.07	27.31	27.22	63.89	52.63
Other variable cash expenses 4/	12.23	12.03	1.14	1.12	0.01	0.01	21.69	21.31	34.40	33.82
Total, variable cash expenses	367.79	350.05	325.68	313.24	314.32	300.83	361.29	349.21	520.98	480.16
General farm overhead	32.90	31.03	19.84	18.72	18.14	17.12	24.91	23.50	86.55	81.64
Taxes and insurance	30.55	38.54	24.24	30.89	20.61	25.99	26.64	34.32	60.06	74.20
Interest	26.57	27.99	26.13	27.53	22.86	24.08	23.86	25.13	35.89	37.81
Total, fixed cash expenses	90.02	97.56	70.21	77.14	61.61	67.19	75.41	82.95	182.50	193.65
Total, cash expenses	457.81	447.61	395.89	390.38	375.93	368.02	436.70	432.16	703.48	673.81
Gross value of production less cash expenses	133.55	78.14	201.03	157.71	199.24	156.93	109.41	59.51	1.45	-8.17
Economic (full ownership) costs:										
Variable cash expenses	367.79	350.05	325.68	313.24	314.32	300.83	361.29	349.21	520.98	480.16
General farm overhead	32.90	31.03	19.84	18.72	18.14	17.12	24.91	23.50	86.55	81.64
Taxes and insurance	30.55	38.54	24.24	30.89	20.61	25.99	26.64	34.32	60.06	74.20
Capital replacement	59.57	60.07	57.16	58.98	52.06	53.60	57.07	58.57	76.92	72.32
Operating capital	9.54	8.50	8.44	7.60	8.14	7.30	9.41	8.52	13.49	11.64
Other nonland capital	21.25	19.10	22.79	20.49	20.32	18.27	21.10	18.97	19.80	17.80
Land	134.62	139.29	122.48	126.56	119.50	123.77	94.15	97.77	233.15	240.92
Unpaid labor	28.53	29.50	30.40	30.07	19.19	19.40	34.02	36.89	29.06	30.60
Total, economic costs	684.75	676.08	611.03	606.55	572.28	566.28	628.59	627.75	1,040.01	1,009.28
Residual returns to management and risk	-93.40	-150.33	-14.11	-58.46	2.89	-41.33	-82.48	-136.08	-335.08	-343.64
Harvest-period price (dollars/cwt.)	10.10	9.35	10.15	9.10	10.18	9.20	10.66	9.65	8.41	9.64
Yield (cwt./planted acre)	58.55	56.23	58.81	60.23	56.50	57.06	51.23	50.95	83.82	69.05

1/ Gulf Coast includes Southwest Louisiana, Upper and Lower Texas Coast. 2/ Cost of custom operations and technical services. 3/ Commercial drying only, beginning in 1992.

4/ Cost of purchased irrigation water.

Appendix table 15--Grain sorghum production costs and returns, excluding direct Government payments, 1997-98

Item	United States		Central Plains		Southern Plains	
	1997	1998	1997	1998	1997	1998
Dollars per planted acre						
Gross value of production (excluding direct Government payments):						
Sorghum	153.91	95.86	172.18	127.98	130.69	60.64
Total, gross value of production	153.91	95.86	172.18	127.98	130.69	60.64
Cash expenses:						
Seed	6.57	6.76	5.53	6.00	7.88	7.59
Fertilizer, lime, and gypsum	17.62	15.15	17.99	15.38	17.16	14.89
Chemicals	11.71	11.36	13.97	13.68	8.86	8.80
Custom operations 1/	5.62	4.85	4.73	4.75	6.73	4.97
Fuel, lube, and electricity	18.48	16.54	11.85	10.47	26.82	23.25
Repairs	17.65	16.75	16.95	17.23	18.53	16.21
Hired labor	5.68	6.15	4.47	4.82	7.21	7.62
Other variable cash expenses 2/	0.00	0.00	0.00	0.00	0.00	0.00
Total, variable cash expenses	83.33	77.56	75.49	72.33	93.19	83.33
General farm overhead	8.93	6.58	10.16	7.56	7.38	5.49
Taxes and insurance	8.65	7.97	9.61	8.86	7.44	6.99
Interest	8.32	6.80	10.03	8.37	6.17	5.06
Total, fixed cash expenses	25.90	21.35	29.80	24.79	20.99	17.54
Total, cash expenses	109.23	98.91	105.29	97.12	114.18	100.87
Gross value of production less cash expenses	44.68	-3.05	66.89	30.86	16.51	-40.23
Economic (full ownership) costs:						
Variable cash expenses	83.33	77.56	75.49	72.33	93.19	83.33
General farm overhead	8.93	6.58	10.16	7.56	7.38	5.49
Taxes and insurance	8.65	7.97	9.61	8.86	7.44	6.99
Capital replacement	32.43	30.77	31.65	32.21	33.41	29.19
Operating capital	2.16	1.88	1.95	1.75	2.41	2.02
Other nonland capital	13.89	11.86	13.64	12.46	14.20	11.18
Land	23.16	13.70	27.39	20.65	17.84	6.02
Unpaid labor	10.39	11.05	10.31	10.96	10.49	11.15
Total, economic costs	182.94	161.37	180.20	166.78	186.36	155.37
Residual returns to management and risk	-29.03	-65.51	-8.02	-38.80	-55.67	-94.73
Harvest-period price (dollars/bu.)	2.29	1.71	2.21	1.61	2.43	2.01
Yield (bu./planted acre)	67.21	56.06	77.91	79.49	53.78	30.17

1/ Cost of custom operations and technical services. 2/ Cost of purchased irrigation water.

Appendix table 16--Barley production costs and returns, excluding direct Government payments, 1997-98

Item	United States		Northeast		Northern Plains		Northwest		Southwest	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre										
Gross value of production (excluding direct Government payments):										
Barley	121.16	100.08	187.33	123.86	91.83	79.90	200.93	145.29	138.86	118.94
Barley straw	5.22	4.93	60.53	61.12	2.67	2.07	4.52	3.66	6.91	6.05
Total, gross value of production	126.38	105.01	247.86	184.98	94.50	81.97	205.45	148.95	145.77	124.99
Cash expenses:										
Seed	8.96	8.45	15.57	13.14	6.77	6.30	13.60	12.69	13.71	12.20
Fertilizer, lime, and gypsum	20.75	19.03	40.32	37.41	16.68	14.49	32.13	29.46	16.70	15.53
Chemicals	9.81	10.13	3.56	3.63	7.97	8.11	17.33	17.24	7.72	7.80
Custom operations	4.70	4.78	4.92	4.79	3.39	3.49	7.07	6.88	10.83	10.77
Fuel, lube, and electricity	13.34	12.14	8.75	7.22	8.59	7.55	27.32	23.97	20.21	18.47
Repairs	14.94	15.29	12.68	12.64	13.87	14.08	18.85	19.10	14.54	14.94
Hired labor	5.62	5.90	4.93	5.13	4.40	4.50	8.67	8.88	8.88	9.87
Other variable cash expenses 1/	2.04	2.12	2.12	2.04	1.04	1.06	4.36	4.23	5.04	5.50
Total, variable cash expenses	80.16	77.84	92.85	86.00	62.71	59.58	129.33	122.45	97.63	95.08
General farm overhead	8.17	6.55	7.48	5.96	7.58	6.07	9.14	7.30	11.74	9.27
Taxes and insurance	13.40	12.40	14.11	13.67	12.13	11.14	14.88	13.97	21.79	19.31
Interest	11.90	10.93	4.02	3.68	12.20	11.33	13.79	12.24	6.45	5.77
Total, fixed cash expenses	33.47	29.88	25.61	23.31	31.91	28.54	37.81	33.51	39.98	34.35
Total, cash expenses	113.63	107.72	118.46	109.31	94.62	88.12	167.14	155.96	137.61	129.43
Gross value of production less cash expenses	12.75	-2.71	129.40	75.67	-0.12	-6.15	38.31	-7.01	8.16	-4.44
Economic (full ownership) costs:										
Variable cash expenses	80.16	77.84	92.85	86.00	62.71	59.58	129.33	122.45	97.63	95.08
General farm overhead	8.17	6.55	7.48	5.96	7.58	6.07	9.14	7.30	11.74	9.27
Taxes and insurance	13.40	12.40	14.11	13.67	12.13	11.14	14.88	13.97	21.79	19.31
Capital replacement	30.51	31.30	23.69	23.61	27.88	28.40	39.16	39.70	33.42	34.46
Operating capital	2.08	1.89	2.41	2.08	1.62	1.45	3.35	2.97	2.53	2.30
Other nonland capital	16.62	15.18	13.28	11.88	16.53	15.10	17.53	15.97	16.19	14.94
Land	38.04	33.64	19.42	18.70	31.09	28.77	60.13	46.14	48.52	46.97
Unpaid labor	7.44	7.91	14.35	15.02	5.82	6.04	11.06	11.33	9.34	10.32
Total, economic costs	196.42	186.71	187.59	176.92	165.36	156.55	284.58	259.83	241.16	232.65
Residual returns to management and risk	-70.04	-81.70	60.27	8.06	-70.86	-74.58	-79.13	-110.88	-95.39	-107.66
Harvest-period price (dollars/bu.)	2.28	1.83	2.39	1.95	2.11	1.69	2.53	1.98	2.47	2.14
Yield (bu./planted acre)	53.14	54.69	78.38	63.52	43.52	47.28	79.42	73.38	56.22	55.58
Cost of purchased irrigation water and baling.										

1/ Cost of purchased irrigation water and baling.

Appendix table 17--Oats production costs and returns, excluding direct Government payments, 1997-98 1/

Item	United States		Northeast		North Central		Northern Plains	
	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre								
Gross value of production (excluding direct Government payments):								
Oats	83.70	66.12	100.20	89.50	104.46	95.16	114.60	110.04
Oats straw	36.14	32.03	47.51	42.11	49.88	44.21	10.06	8.92
Total, gross value of production	119.84	98.15	147.71	131.61	154.34	139.37	124.66	118.96
Cash expenses:								
Seed	9.11	7.89	14.16	14.34	10.10	9.72	6.72	3.97
Fertilizer, lime, and gypsum	16.68	15.63	29.00	28.20	20.09	19.10	9.62	8.46
Chemicals	1.83	1.83	2.90	2.90	1.27	1.27	2.32	2.32
Custom operations 2/	4.30	4.31	4.89	4.89	5.71	5.73	2.41	2.41
Fuel, lube, and electricity	7.99	6.71	13.52	10.67	4.33	3.54	10.59	9.11
Repairs	11.40	10.84	14.80	14.52	7.63	7.10	14.75	13.73
Hired labor	2.02	2.13	3.27	3.45	1.81	1.91	0.36	0.38
Other variable cash expenses 3/	1.34	1.19	1.65	1.46	1.84	1.63	0.45	0.40
Total, variable cash expenses	54.67	50.53	84.19	80.43	52.78	50.00	47.22	40.78
General farm overhead	6.21	5.86	9.26	8.73	5.31	5.01	3.77	3.56
Taxes and insurance	14.85	14.85	22.10	22.10	20.15	20.15	7.75	7.75
Interest	5.52	5.82	5.30	5.58	6.17	6.50	5.13	5.40
Total, fixed cash expenses	26.58	26.53	36.66	36.41	31.63	31.66	16.65	16.71
Total, cash expenses	81.25	77.06	120.85	116.84	84.41	81.66	63.87	57.49
Gross value of production less cash expenses	38.59	21.09	26.86	14.77	69.93	57.71	60.79	61.47
Economic (full ownership) costs:								
Variable cash expenses	54.67	50.53	84.19	80.43	52.78	50.00	47.22	40.78
General farm overhead	6.21	5.86	9.26	8.73	5.31	5.01	3.77	3.56
Taxes and insurance	14.85	14.85	22.10	22.10	20.15	20.15	7.75	7.75
Capital replacement	20.48	19.49	22.93	22.51	14.20	13.21	26.19	24.37
Operating capital	1.31	1.12	2.18	1.95	1.37	1.21	1.22	0.99
Nonland capital	11.86	10.67	13.26	11.92	11.49	10.33	12.24	11.01
Land	27.83	27.96	6.00	6.03	37.08	37.26	22.44	22.55
Unpaid labor	17.34	17.77	21.88	23.09	21.76	22.50	11.59	11.42
Total, economic costs	154.55	148.25	181.80	176.76	164.14	159.67	132.42	122.43
Residual returns to management and risk	-34.71	-50.10	-34.09	-45.15	-9.80	-20.30	-7.76	-3.47
Harvest-period price (dollars/bu.)	1.25	1.06	1.65	1.65	1.62	1.62	1.67	1.67
Yield (bu./planted acre)	66.96	62.38	60.73	54.24	64.48	58.74	68.62	65.89

1/ Survey base year 1994. 2/ Cost of custom operations and technical services. 3/ Cost of baling.

Appendix table 18--Sugar beet production costs and returns, 1997-98 1/

Item	United States		Great Lakes		Red River Valley		Great Plains		Northwest		Southwest	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Dollars per planted acre												
Gross value of production:												
Beets	800.72	848.53	710.71	595.60	697.50	800.50	679.67	744.23	1,111.07	1,127.70	1,311.79	1,267.94
Beet tops	0.80	0.54	0.00	0.00	0.00	0.00	2.97	2.65	0.04	0.04	3.00	1.27
Total, gross value of production	801.52	849.07	710.71	595.60	697.50	800.50	682.64	746.88	1,111.11	1,127.74	1,314.79	1,269.21
Cash expenses:												
Seed	43.63	45.01	25.14	26.04	44.81	46.39	47.69	49.88	46.31	47.98	48.62	50.36
Fertilizer	69.51	62.84	67.91	65.31	39.86	35.68	88.02	80.66	121.94	109.52	106.36	103.90
Chemicals	74.15	73.83	60.47	60.53	71.13	71.43	77.22	75.77	82.79	83.05	89.50	89.13
Custom operations	36.18	37.10	28.16	27.69	23.30	25.42	22.78	20.36	36.54	37.64	172.23	174.38
Fuel and lubrication	42.72	37.19	26.33	21.13	20.73	18.43	55.13	45.41	96.85	90.63	65.76	60.40
Repairs	42.98	43.20	33.49	30.45	31.53	33.53	55.89	57.88	66.93	66.24	47.43	47.55
Hired labor	111.77	116.07	63.97	70.46	83.06	86.06	111.98	119.13	198.59	204.63	195.33	205.73
Purchased irrigation water	9.75	9.28	0.00	0.00	0.05	0.05	13.68	14.34	31.25	30.22	33.47	32.35
Freight and dirt hauling charges	17.27	14.72	8.89	6.25	11.81	11.25	17.81	17.20	16.79	12.92	66.87	51.71
Miscellaneous	13.34	12.58	4.47	4.12	16.94	15.71	6.44	6.24	5.89	5.63	39.00	36.03
Hauling allowance (-)	8.93	7.93	3.26	2.30	11.36	10.75	2.01	1.38	1.76	1.34	36.56	28.27
Total, variable cash expenses	452.37	443.89	315.57	309.68	331.86	333.20	494.63	485.49	702.12	687.12	828.01	823.27
General farm overhead	39.38	36.91	41.68	39.28	30.90	29.09	46.06	44.07	48.10	45.36	54.99	51.87
Taxes and insurance	43.15	44.63	61.22	64.23	39.24	40.40	41.34	42.63	38.77	39.60	54.38	55.74
Interest	45.78	48.11	49.72	52.33	41.99	44.13	52.98	57.00	47.05	49.55	41.76	43.99
Total, fixed cash expenses	128.31	129.65	152.62	155.84	112.13	113.62	140.38	143.70	133.92	134.51	151.13	151.60
Total, cash expenses	580.68	573.54	468.19	465.52	443.99	446.82	635.01	629.19	836.04	821.63	979.14	974.87
Gross value of production less cash expenses	220.84	275.53	242.52	130.08	253.51	353.68	47.63	117.69	275.07	306.11	335.65	294.34
Economic (full ownership) costs:												
Variable cash expenses	452.37	443.89	315.57	309.68	331.86	333.20	494.63	485.49	702.12	687.12	828.01	823.27
General farm overhead	39.38	36.91	41.68	39.28	30.90	29.09	46.06	44.07	48.10	45.36	54.99	51.87
Taxes and insurance	43.15	44.63	61.22	64.23	39.24	40.40	41.34	42.63	38.77	39.60	54.38	55.74
Capital replacement	57.10	57.54	43.75	39.78	41.42	44.04	73.28	76.66	96.07	95.14	54.86	55.01
Operating capital	11.72	10.76	8.17	7.51	8.60	8.08	12.81	11.77	18.19	16.66	21.44	19.96
Nonland capital	31.87	28.80	32.25	26.36	22.30	21.32	43.25	40.88	46.67	41.51	31.61	28.50
Land	138.77	144.67	115.18	113.60	134.52	139.32	109.31	122.00	184.24	186.86	191.13	199.55
Coop share	25.75	25.06	0.00	0.00	54.90	51.37	0.00	0.00	0.00	0.00	0.00	0.00
Unpaid labor	51.59	53.49	63.70	70.14	39.84	41.27	82.16	88.42	48.92	50.50	30.21	31.82
Total, economic costs	851.70	845.75	681.52	670.58	703.58	708.09	902.84	911.92	1,183.08	1,162.75	1,266.63	1,265.72
Residual returns to management and risk	-50.18	3.32	29.19	-74.99	-6.08	92.41	-220.20	-165.04	-71.97	-35.01	48.16	3.49
Season-average price (dollars/ton)	38.87	38.87	38.50	38.50	38.43	38.43	37.10	37.10	40.55	40.55	40.60	40.60
Yield (net tons/planted acre) 2/	20.60	21.83	18.46	15.47	18.15	20.83	18.32	20.06	27.40	27.81	32.31	31.23

1/ 1997 estimates are revised. 1998 estimates are preliminary. Sugarbeet prices are held at the 1997 level because State-level prices for the 1998 season will not be available before January 2000. 2/ Yields are those reported in USDA's 1992 Farm Costs and Returns Survey of sugarbeet growers adjusted for year-over-year changes as reported by NASS/USDA in Crop Production, 1998 Summary, January 1999.

Note: Sugar beet regions defined as: Great Lakes (Michigan, Ohio), Red River Valley (Minnesota, eastern North Dakota), Great Plains (western North Dakota, Montana, Wyoming, Nebraska, Colorado, Texas), Northwest (Idaho, Oregon except Klamath County), and Southwest (California, Klamath County of Oregon).

Appendix table 19--U.S. tobacco production costs and returns, 1997-98

Item	Flue-cured				Burley			
	1997	1998	1997	1998	1997	1998	1997	1998
	Dollars per acre		Dollars per cwt		Dollars per acre		Dollars per cwt	
Gross value of production								
Tobacco	3,921.60	3,846.50	172.00	175.00	3,655.07	3,684.21	188.60	190.30
Total, gross value of production	3,921.60	3,846.50	172.00	175.00	3,655.07	3,684.21	188.60	190.30
Cash expenses:								
Seed and plant bed	57.65	59.10	2.53	2.69	100.04	100.04	5.16	5.17
Fertilizer	290.73	304.39	12.75	13.85	296.94	296.88	15.32	15.33
Chemicals	218.38	220.18	9.58	10.02	98.65	100.29	5.09	5.18
Custom operations	9.88	8.00	0.43	0.36	14.48	13.58	0.75	0.70
Fuel, lube, and electricity	71.74	59.56	3.15	2.71	77.66	63.28	4.01	3.27
Curing fuel	301.50	290.67	13.22	13.22				
Repairs	109.74	110.67	4.81	5.04	72.25	72.86	3.73	3.76
Hired labor	491.96	554.12	21.58	25.21	432.59	455.40	22.32	23.52
Marketing expenses	148.98	145.95	6.53	6.64	143.45	167.28	7.40	8.64
Other variable cash expenses	4.12	3.96	0.18	0.18	19.72	21.84	1.02	1.13
Total, variable cash expenses	1,704.68	1,756.60	74.77	79.92	1,255.78	1,291.45	64.80	66.71
General farm overhead	149.71	181.75	6.57	8.27	210.40	202.86	10.86	10.48
Taxes and insurance	122.91	140.61	5.39	6.40	44.22	44.88	2.28	2.32
Interest	142.47	169.37	6.25	7.71	71.22	76.68	3.67	3.96
Total, fixed cash expenses	415.09	491.73	18.21	22.37	325.84	324.42	16.81	16.76
Total, cash expenses	2,119.77	2,248.33	92.97	102.29	1,581.62	1,615.87	81.61	83.46
Gross value of production less cash expenses	1,801.83	1,598.17	79.03	72.71	2,073.45	2,068.34	106.99	106.84
Economic (full ownership) costs:								
Variable cash expenses	1,704.68	1,756.60	74.77	79.92	1,255.78	1,291.45	64.80	66.71
General farm overhead	149.71	181.75	6.57	8.27	210.40	202.86	10.86	10.48
Taxes and insurance	122.91	140.61	5.39	6.40	44.22	44.88	2.28	2.32
Capital replacement	273.03	283.70	11.98	12.91	91.07	93.89	4.70	4.85
Operating capital	44.55	42.60	1.95	1.94	34.19	31.31	1.76	1.62
Other nonland capital	84.40	80.10	3.70	3.64	113.12	104.87	5.84	5.42
Land and quota	777.44	798.94	34.10	36.35	947.35	984.90	48.88	50.87
Unpaid labor	199.62	224.84	8.76	10.23	600.16	631.80	30.97	32.63
Total, economic (full ownership) costs	3,356.34	3,509.14	147.21	159.65	3,296.29	3,385.96	170.09	174.89
Residual returns to management and risk	565.26	337.36	24.79	15.35	358.78	298.25	18.51	15.41
Harvest-period price (dollars/lb. or cwt)	1.72	1.75	172.35	175.36	1.89	1.90	188.60	190.30
Yield (lb. or cwt/harvested acre)	2,280	2,198	22.80	21.98	1,938	1,936	19.38	19.36

Appendix table 20--Milk production costs and returns, 1997-98

Item	United States		Corn Belt		Northeast		Pacific		Southeast		Southern Plains		Upper Midwest	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
	Dollars per cwt													
Gross value of production:														
Milk	13.43	15.51	13.46	15.39	13.74	15.63	12.77	15.07	15.87	17.63	13.70	15.70	13.32	15.48
Cattle	0.85	0.83	1.06	1.04	0.75	0.73	0.63	0.61	0.95	0.92	0.85	0.84	0.97	0.94
Other income	0.59	0.55	0.50	0.47	0.46	0.43	0.56	0.56	0.52	0.51	0.38	0.36	0.75	0.68
Total, gross value of production	14.87	16.89	15.02	16.90	14.95	16.79	13.96	16.24	17.34	19.06	14.93	16.90	15.04	17.10
Cash expenses:														
Feed--														
Concentrates	4.42	4.00	4.98	4.41	4.42	4.07	3.17	2.94	6.81	5.79	5.95	5.50	4.53	4.07
By-products	0.23	0.23	0.30	0.28	0.04	0.04	0.48	0.47	0.50	0.50	0.19	0.19	0.12	0.13
Liquid whey	0.13	0.14	0.25	0.26	0.14	0.15	0.05	0.05	0.05	0.05	0.01	0.01	0.17	0.18
Hay	1.82	1.60	2.07	1.64	1.68	1.48	2.71	2.34	0.65	0.77	2.02	2.56	1.36	1.14
Silage	1.68	1.43	1.73	1.28	2.26	2.03	1.10	0.95	0.93	1.09	0.10	0.13	1.99	1.67
Pasture and other forage	0.12	0.11	0.13	0.13	0.03	0.03	0.20	0.12	0.07	0.06	0.08	0.10	0.12	0.14
Total, feed costs	8.40	7.51	9.46	8.00	8.57	7.80	7.71	6.87	9.01	8.26	8.35	8.49	8.29	7.33
Other--														
Hauling	0.45	0.45	0.42	0.45	0.69	0.69	0.39	0.38	0.89	0.95	0.54	0.53	0.29	0.29
Artificial insemination	0.15	0.15	0.12	0.12	0.20	0.20	0.12	0.11	0.11	0.12	0.04	0.04	0.18	0.17
Veterinary and medicine	0.39	0.39	0.39	0.41	0.45	0.44	0.20	0.20	0.45	0.49	0.18	0.17	0.50	0.49
Bedding and litter	0.25	0.25	0.31	0.32	0.35	0.38	0.05	0.05	0.00	0.00	0.00	0.00	0.35	0.34
Marketing	0.37	0.37	0.30	0.31	0.46	0.45	0.45	0.44	0.49	0.52	0.24	0.24	0.29	0.29
Custom services and supplies	0.43	0.43	0.37	0.39	0.55	0.55	0.41	0.39	0.60	0.64	0.29	0.28	0.39	0.39
Fuel, lube, and electricity	0.53	0.49	0.56	0.52	0.69	0.65	0.29	0.26	0.34	0.31	0.48	0.44	0.61	0.56
Repairs	0.83	0.85	0.96	0.99	0.99	1.01	0.31	0.32	0.64	0.67	0.45	0.47	1.09	1.13
Hired labor	0.59	0.57	0.58	0.54	0.58	0.57	0.54	0.52	1.31	1.27	0.76	0.72	0.53	0.50
DHIA fees	0.08	0.08	0.07	0.07	0.10	0.10	0.07	0.07	0.05	0.05	0.04	0.04	0.08	0.08
Dairy assessment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total, variable cash expenses	12.47	11.54	13.54	12.12	13.63	12.84	10.54	9.61	13.89	13.28	11.37	11.42	12.60	11.57
General farm overhead	0.60	0.62	0.64	0.66	0.60	0.61	0.38	0.39	0.72	0.74	0.51	0.53	0.73	0.75
Taxes and insurance	0.32	0.36	0.30	0.33	0.43	0.48	0.13	0.14	0.35	0.40	0.16	0.18	0.42	0.46
Interest	0.83	0.95	0.69	0.79	0.76	0.87	0.62	0.71	0.59	0.67	0.59	0.67	1.13	1.29
Total, fixed cash expenses	1.75	1.93	1.63	1.78	1.79	1.96	1.13	1.24	1.66	1.81	1.26	1.38	2.28	2.50
Total, cash expenses	14.22	13.47	15.17	13.90	15.42	14.80	11.67	10.85	15.55	15.09	12.63	12.80	14.88	14.07
Gross value of production less cash expenses	0.65	3.42	-0.15	3.00	-0.47	1.99	2.29	5.39	1.79	3.97	2.30	4.10	0.16	3.03
Economic (full-ownership) costs:														
Variable cash expenses	12.47	11.54	13.54	12.12	13.63	12.84	10.54	9.61	13.89	13.28	11.37	11.42	12.60	11.57
General farm overhead	0.60	0.62	0.64	0.66	0.60	0.61	0.38	0.39	0.72	0.74	0.51	0.53	0.73	0.75
Taxes and insurance	0.32	0.36	0.30	0.33	0.43	0.48	0.13	0.14	0.35	0.40	0.16	0.18	0.42	0.46
Capital replacement	2.15	2.10	2.24	2.21	2.14	2.07	1.48	1.34	2.59	2.51	2.13	1.99	2.50	2.53
Operating capital	0.11	0.10	0.11	0.10	0.12	0.11	0.09	0.08	0.11	0.11	0.10	0.10	0.11	0.10
Other nonland capital	0.99	0.87	0.98	0.87	0.94	0.82	0.69	0.56	1.68	1.47	0.94	0.79	1.12	1.03
Land	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.01
Unpaid labor	1.73	1.65	2.84	2.68	2.44	2.38	0.44	0.43	0.31	0.31	0.88	0.83	2.04	1.95
Total, economic (full-ownership) costs	18.37	17.25	20.66	18.98	20.30	19.31	13.76	12.56	19.65	18.83	16.09	15.84	19.52	18.40
Residual returns to management and risk	-3.50	-0.36	-5.64	-2.08	-5.35	-2.52	0.20	3.68	-2.31	0.23	-1.16	1.06	-4.48	-1.30

Appendix table 21--Hog production costs and returns, 1997-98

Item	United States		North		South	
	1997	1998	1997	1998	1997	1998
Dollars per cwt gain 1/						
Gross value of production:						
Market hogs	47.75	30.50	47.25	30.30	49.35	31.22
Feeder pigs	6.60	4.24	6.78	4.36	6.01	3.79
Cull stock	3.30	1.83	3.33	1.85	3.20	1.77
Breeding stock	2.75	1.43	3.09	1.60	1.67	0.84
Inventory change	1.56	0.15	1.85	0.21	0.61	-0.09
Other income 2/	1.29	1.21	1.41	1.31	0.91	0.86
Total, gross value of production	63.25	39.36	63.71	39.63	61.75	38.39
Cash expenses:						
Feed--						
Grain	12.45	10.19	12.79	10.50	11.40	9.06
Protein sources	11.89	9.04	12.91	9.34	8.65	7.97
Complete mixes	7.10	6.42	5.72	5.13	11.50	11.08
Other feed items 3/	0.66	0.61	0.80	0.72	0.21	0.22
Total feed costs	32.10	26.26	32.22	25.69	31.76	28.33
Other--						
Feeder pigs	4.87	3.21	4.57	2.93	5.82	4.24
Veterinary and medicine	1.24	1.41	1.38	1.56	0.79	0.88
Bedding and litter	0.07	0.08	0.09	0.10	0.02	0.02
Marketing	0.52	0.57	0.50	0.55	0.59	0.63
Custom services and supplies	0.44	0.50	0.40	0.46	0.57	0.64
Fuel, lube, and electricity	1.79	1.57	1.79	1.57	1.80	1.58
Repairs	1.45	1.52	1.50	1.57	1.29	1.34
Hired labor	2.97	3.10	3.04	3.13	2.74	2.99
Total, variable cash expenses	45.45	38.22	45.49	37.56	45.38	40.65
General farm overhead	2.04	2.19	2.23	2.36	1.45	1.57
Taxes and insurance	1.13	1.29	1.16	1.31	1.06	1.22
Interest	2.93	3.51	3.22	3.83	2.01	2.38
Total, fixed cash expenses	6.10	6.99	6.61	7.50	4.52	5.17
Total, cash expenses	51.55	45.21	52.10	45.06	49.90	45.82
Gross value of production less cash expenses	11.70	-5.85	11.61	-5.43	11.85	-7.43
Economic (full ownership) costs:						
Variable cash expenses	45.45	38.22	45.49	37.56	45.38	40.65
General farm overhead	2.04	2.19	2.23	2.36	1.45	1.57
Taxes and insurance	1.13	1.29	1.16	1.31	1.06	1.22
Capital replacement	11.49	12.17	11.99	12.07	13.29	12.54
Operating capital	1.22	0.93	1.18	0.91	1.17	0.99
Other nonland capital	3.84	4.18	4.41	4.00	5.63	4.84
Land	0.25	0.24	0.26	0.27	0.14	0.12
Unpaid labor	5.48	5.88	6.04	6.30	4.21	4.36
Total, economic (full-ownership) costs	70.90	65.10	72.76	64.78	72.33	66.29
Residual returns to management and risk	-7.65	-25.74	-9.05	-25.15	-10.58	-27.90

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production.

3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.

Appendix table 22--Farrow-to-finish production costs and returns, 1997-98

Item	United States		North		South	
	1997	1998	1997	1998	1997	1998
Dollar per cwt gain 1/						
Gross value of production:						
Market hogs	49.15	31.39	49.05	31.42	49.51	31.25
Feeder pigs	0.59	0.39	0.57	0.38	0.65	0.44
Cull stock	3.11	1.75	3.29	1.83	2.46	1.44
Breeding stock	0.26	0.14	0.22	0.12	0.38	0.22
Inventory change	1.68	0.18	2.00	0.26	0.55	-0.11
Other income 2/	1.35	1.27	1.46	1.35	0.98	0.94
Total, gross value of production	56.14	35.12	56.59	35.36	54.53	34.18
Cash expenses:						
Feed--						
Grain	13.17	10.73	12.87	10.59	14.23	11.28
Protein sources	13.08	9.95	13.54	9.81	11.49	10.53
Complete mixes	5.15	4.67	4.24	3.76	8.28	8.27
Other feed items 3/	0.64	0.59	0.73	0.66	0.31	0.31
Total feed costs	32.04	25.94	31.38	24.82	34.31	30.39
Other--						
Feeder pigs	0.19	0.12	0.23	0.14	0.06	0.04
Veterinary and medicine	1.09	1.23	1.16	1.29	0.87	1.00
Bedding and litter	0.05	0.06	0.06	0.07	0.02	0.02
Marketing	0.42	0.46	0.41	0.45	0.47	0.52
Custom services and supplies	0.37	0.42	0.35	0.40	0.45	0.52
Fuel, lube, and electricity	1.73	1.51	1.67	1.47	1.92	1.69
Repairs	1.45	1.52	1.47	1.54	1.37	1.43
Hired labor	2.71	2.83	2.66	2.73	2.91	3.22
Total, variable cash expenses	40.05	34.09	39.39	32.91	42.38	38.83
General farm overhead	1.82	1.96	1.94	2.07	1.42	1.53
Taxes and insurance	1.03	1.17	1.05	1.19	0.94	1.08
Interest	2.62	3.15	2.90	3.45	1.69	1.97
Total, fixed cash expenses	5.47	6.28	5.89	6.71	4.05	4.58
Total, cash expenses	45.52	40.37	45.28	39.62	46.43	43.41
Gross value of production less cash expenses	10.62	-5.25	11.31	-4.26	8.10	-9.23
Economic (full ownership) costs:						
Variable cash expenses	40.05	34.09	39.39	32.91	42.38	38.83
General farm overhead	1.82	1.96	1.94	2.07	1.42	1.53
Taxes and insurance	1.03	1.17	1.05	1.19	0.94	1.08
Capital replacement	11.93	11.88	11.71	11.83	12.67	12.05
Operating capital	1.04	0.83	1.02	0.80	1.10	0.94
Other nonland capital	4.56	4.08	4.35	3.95	5.26	4.58
Land	0.24	0.25	0.27	0.28	0.13	0.12
Unpaid labor	5.40	5.64	5.72	5.94	4.30	4.43
Total, economic (full-ownership) costs	66.07	59.90	65.45	58.97	68.20	63.56
Residual returns to management and risk	-9.93	-24.78	-8.86	-23.61	-13.67	-29.38

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production.

3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.

Appendix table 23--Farrow-to-feeder pig production costs and returns, 1997-98

Item	United States		North		South	
	1997	1998	1997	1998	1997	1998
Dollar per cwt gain 1/						
Gross value of production:						
Market hogs	1.15	0.72	1.30	0.81	0.75	0.42
Feeder pigs	91.53	58.67	94.41	60.11	83.84	54.01
Cull stock	7.85	4.39	7.61	4.21	8.48	4.98
Breeding stock	0.16	0.10	0.20	0.12	0.06	0.03
Inventory change	0.97	-0.11	1.21	-0.02	0.35	-0.42
Other income 2/	1.43	1.35	1.48	1.38	1.28	1.26
Total, gross value of production	103.09	65.12	106.21	66.61	94.76	60.28
Cash expenses:						
Feed--						
Grain	14.00	11.73	16.85	13.62	6.39	5.61
Protein sources	12.23	9.30	14.71	10.42	5.61	5.67
Complete mixes	19.29	17.35	12.85	11.74	36.48	35.51
Other feed items 3/	0.80	0.74	1.03	0.92	0.18	0.18
Total feed costs	46.32	39.12	45.44	36.70	48.66	46.97
Other--						
Feeder pigs	0.06	0.03	0.08	0.04	0.01	0.00
Veterinary and medicine	4.20	4.88	4.90	5.53	2.33	2.76
Bedding and litter	0.18	0.22	0.24	0.27	0.04	0.04
Marketing	2.48	2.65	2.17	2.44	3.32	3.32
Custom services and supplies	1.43	1.59	0.91	1.03	2.82	3.41
Fuel, lube, and electricity	5.31	4.71	5.22	4.60	5.56	5.07
Repairs	2.88	2.93	3.22	3.25	1.99	1.89
Hired labor	8.68	9.29	7.15	7.67	12.77	14.53
Total, variable cash expenses	71.54	65.42	69.33	61.53	77.50	77.99
General farm overhead	3.80	4.06	3.77	3.96	3.87	4.38
Taxes and insurance	2.43	2.77	2.15	2.43	3.17	3.88
Interest	6.03	7.33	5.30	6.39	7.98	10.39
Total, fixed cash expenses	12.26	14.16	11.22	12.78	15.02	18.65
Total, cash expenses	83.80	79.58	80.55	74.31	92.52	96.64
Gross value of production less cash expenses	19.29	-14.46	25.66	-7.70	2.24	-36.36
Economic (full ownership) costs:						
Variable cash expenses	71.54	65.42	69.33	61.53	77.50	77.99
General farm overhead	3.80	4.06	3.77	3.96	3.87	4.38
Taxes and insurance	2.43	2.77	2.15	2.43	3.17	3.88
Capital replacement	28.69	27.99	24.92	24.92	38.78	37.89
Operating capital	1.86	1.59	1.80	1.49	2.01	1.89
Other nonland capital	10.15	8.97	8.63	7.84	14.20	12.64
Land	0.51	0.49	0.50	0.48	0.53	0.53
Unpaid labor	12.08	12.71	12.92	13.41	9.85	10.46
Total, economic (full-ownership) costs	131.06	124.00	124.02	116.06	149.91	149.66
Residual returns to management and risk	-27.97	-58.88	-17.81	-49.45	-55.15	-89.38

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production.

3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.

Appendix table 24--Feeder pig-to-finish production costs and returns, 1997-98

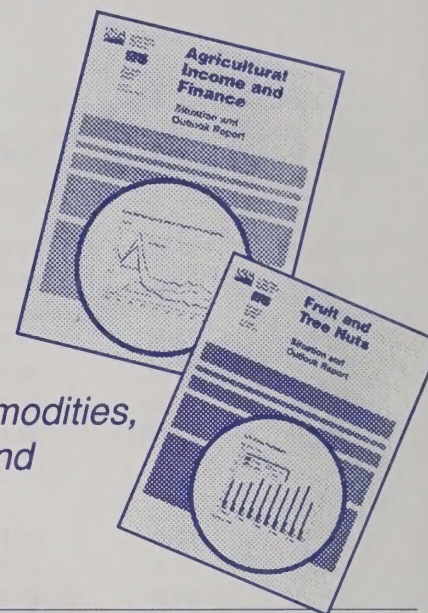
Item	United States		North		South	
	1997	1998	1997	1998	1997	1998
Dollars per cwt gain 1/						
Gross value of production:						
Market hogs	65.24	41.55	65.81	42.17	64.18	40.25
Feeder pigs	0.07	0.04	0.07	0.04	0.07	0.05
Cull stock	0.04	0.02	0.02	0.01	0.07	0.04
Breeding stock	0.01	0.01	0.02	0.01	0.00	0.00
Inventory change	1.73	0.19	2.24	0.25	0.77	0.05
Other income 2/	1.02	0.97	1.30	1.20	0.50	0.48
Total, gross value of production	68.11	42.78	69.46	43.68	65.59	40.87
Cash expenses:						
Feed--						
Grain	9.53	7.92	11.62	9.58	5.63	4.43
Protein sources	6.84	5.24	8.50	6.10	3.75	3.43
Complete mixes	10.00	9.03	7.87	6.93	13.96	13.48
Other feed items 3/	0.38	0.36	0.55	0.50	0.05	0.06
Total feed costs	26.75	22.55	28.54	23.11	23.39	21.40
Other--						
Feeder pigs	25.35	16.79	27.02	17.16	22.23	16.01
Veterinary and medicine	0.63	0.74	0.84	0.97	0.25	0.28
Bedding and litter	0.09	0.11	0.14	0.17	0.00	0.00
Marketing	0.38	0.42	0.40	0.44	0.35	0.39
Custom services and supplies	0.38	0.42	0.32	0.35	0.48	0.55
Fuel, lube, and electricity	0.84	0.73	0.85	0.74	0.83	0.71
Repairs	0.90	0.94	1.07	1.10	0.59	0.61
Hired labor	0.91	0.94	1.22	1.23	0.35	0.33
Total, variable cash expenses	56.23	43.64	60.40	45.27	48.47	40.28
General farm overhead	1.70	1.82	1.97	2.08	1.19	1.27
Taxes and insurance	1.08	1.24	1.12	1.27	1.01	1.17
Interest	3.01	3.61	3.53	4.19	2.03	2.39
Total, fixed cash expenses	5.79	6.67	6.62	7.54	4.23	4.83
Total, cash expenses	62.02	50.31	67.02	52.81	52.70	45.11
Gross value of production less cash expenses	6.09	-7.53	2.44	-9.13	12.89	-4.24
Economic (full ownership) costs:						
Variable cash expenses	56.23	43.64	60.40	45.27	48.47	40.28
General farm overhead	1.70	1.82	1.97	2.08	1.19	1.27
Taxes and insurance	1.08	1.24	1.12	1.27	1.01	1.17
Capital replacement	8.32	8.20	8.40	8.41	8.17	7.75
Operating capital	1.46	1.06	1.56	1.10	1.25	0.98
Other nonland capital	3.45	3.02	3.17	2.85	3.97	3.36
Land	0.11	0.11	0.12	0.13	0.07	0.07
Unpaid labor	4.71	5.04	5.67	5.95	2.91	3.12
Total, economic (full-ownership) costs	77.06	64.13	82.41	67.06	67.04	58.00
Residual returns to management and risk	-8.95	-21.35	-12.95	-23.38	-1.45	-17.13

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production.

3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.

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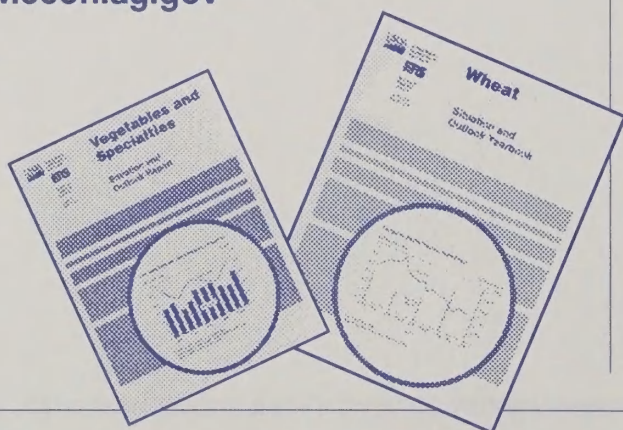
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Monthly
Monthly
*Mar, Sept, Oct**
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Mar, Oct
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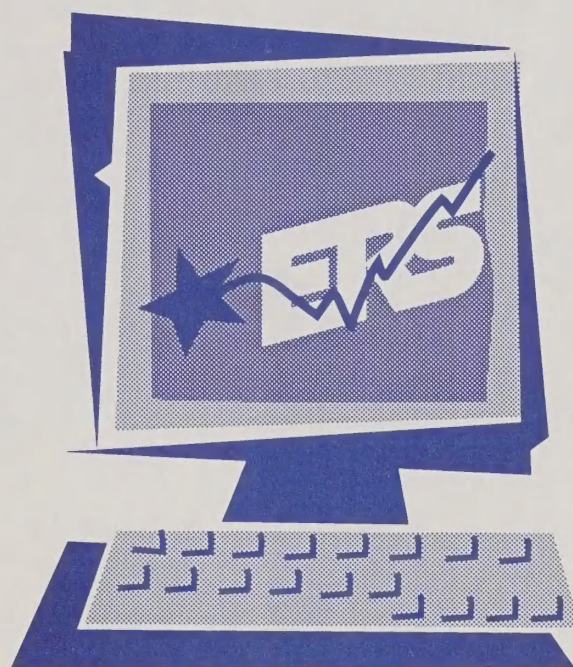
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